Feast Yourself:
The Food Truck Finder

MSIS 4363

Amanda Brown

Problem Definition:

The goal of this project is to produce a functioning mobile Android application which will provide a means to track and locate food trucks in the Stillwater, OK area. Currently, there are no such applications available. Without this application, users searching for food trucks have no easy means by which they can find hours and locations for local food trucks. Instead, they are forced to use various methods such as Google and social media, which often contain outdated information or information that is difficult to find. This application seeks to solve that issue by providing users with a mobile application containing information directly obtained from food truck vendors, updated by the vendors themselves as often as needed. Also, this application will benefit truck vendors as such an application will attract customers by making the food trucks easier to find.

Identification of specific problems:

A web application for the purpose of tracking food truck locations and hours already exists, as a project from a previous class group. However, this web application is not as useful to users as a mobile application, as it requires the use of a web browser and is therefore not optimized for mobile devices. As most users will be searching for locations and hours using mobile devices, it is important that the web application be replaced with a streamlined mobile application. This mobile application will take the existing web application and provide a redesigned interface which will provide comparable functionality in a more user-friendly fashion.

Estimate of the scope of project:

- User system
    - User login
    - Create new user
    - Allow selection of favorite trucks
    - Automatically display favorites
    - Show messages from favorites
    - Allow searches for new trucks
    - Find truck locations on map

- Truck Vendor system
    - Truck vendor login
    - Create new truck vendor
    - Set truck description
    - Set truck hours
    - Update truck location
    - Update information in database

Description of development methodology:

- Agile Methodology
- Email as a main form of communication
- Meet with Thesis Director once a week to review progress
- Meet periodically with Second Reader to review progress
- UML Charts
    - Use Case Diagrams
    - Activity Diagrams
- Android development environment

Estimate of the feasibility of the project:

Financial Feasibility: The project is feasible financially as it will utilize free resources to host the database, and it will use the free Android Studio development environment.

Time Feasibility: Though this is a detailed project, the application should be able to be developed within the time allotted for the class this semester. It will include about 20-30 hours of work outside of actual class time.

Technical Feasibility: The only technical restriction is the lack of any device besides the emulator on which to test the final product, a restriction which was resolved by obtaining an Android device from the instructor. As for other technical feasibility, for an expanded version of the application, a scalable database server for business usage would be necessary. However, for this project, student access to free online cloud services, such as Microsoft Azure, is sufficient for prototyping purposes.

Introduce your team:

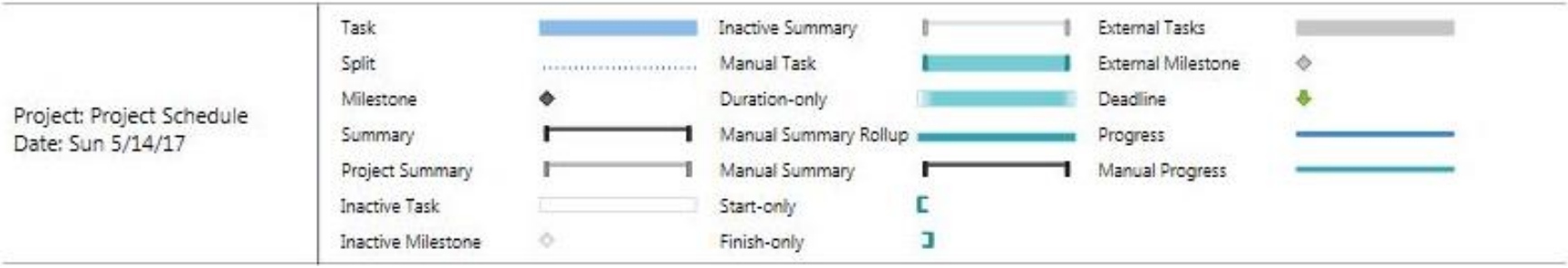
Amanda Brown is a senior at Oklahoma State University, pursuing two degrees in Accounting and in Management Science Information Systems: Information Assurance with a minor in Computer Science. She is a member of the Oklahoma State Honors College and is using this capstone project as her Honors Thesis in order to graduate with her College Honors Award and Honors College Degree.

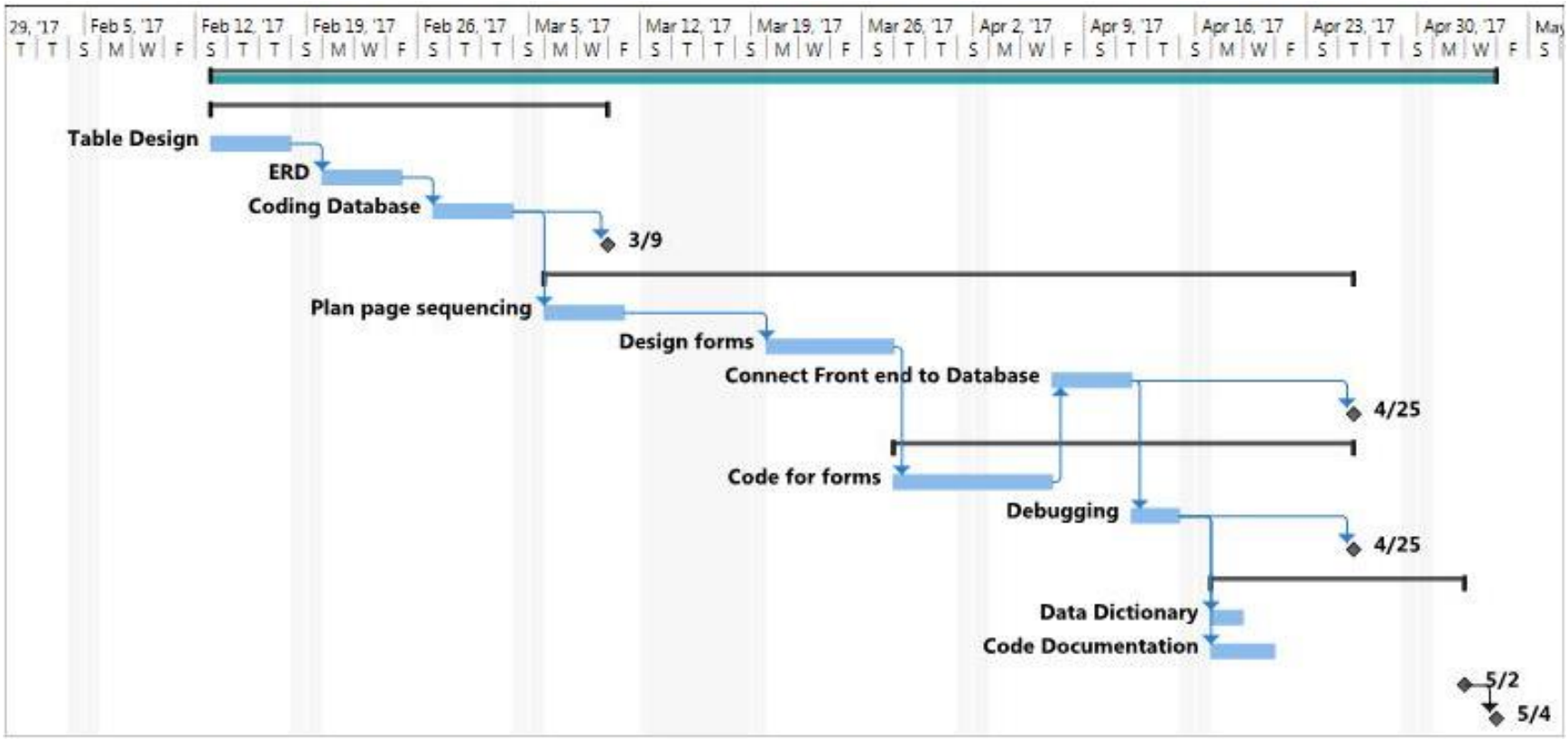
Schedule/Plan: Full MS Project Schedule attached – small schedule included here

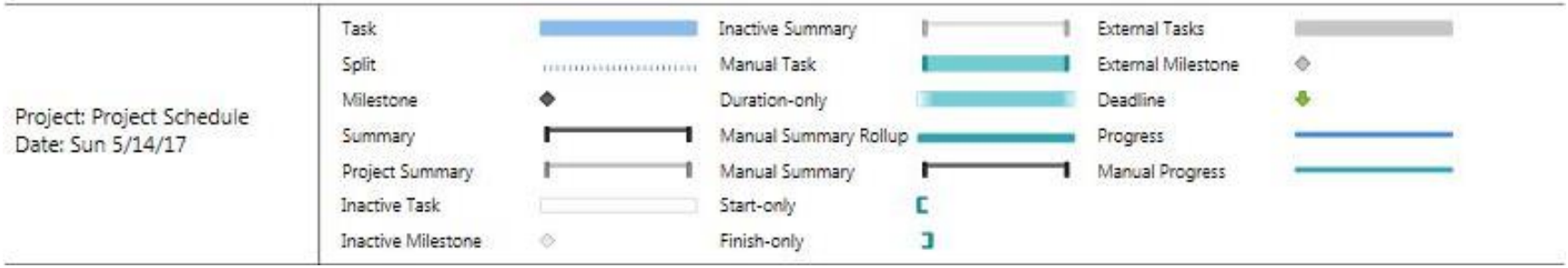
WBS	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1	**Manually Scheduled**	**Project**	**54 days**	**Mon 2/13/17**	**Thu 5/4/17**	
1.1	**Auto Scheduled**	**Database Development**	**19 days**	**Mon 2/13/17**	**Thu 3/9/17**	
1.1.1	Auto Scheduled	Table Design	5 days	Mon 2/13/17	Fri 2/17/17	
1.1.2	Auto Scheduled	ERD	5 days	Mon 2/20/17	Fri 2/24/17	3
1.1.3	Auto Scheduled	Coding Database	5 days	Mon 2/27/17	Fri 3/3/17	4
1.1.4	Auto Scheduled	Database Deadline	0 days	Thu 3/9/17	Thu 3/9/17	5
1.2	**Auto Scheduled**	**Front End Development**	**32 days**	**Mon 3/6/17**	**Tue 4/25/17**	
1.2.1	Auto Scheduled	Plan page sequencing	5 days	Mon 3/6/17	Fri 3/10/17	5
1.2.2	Auto Scheduled	Design forms	6 days	Mon 3/20/17	Mon 3/27/17	8
1.2.3	Auto Scheduled	Connect Front end to Database	3 days	Fri 4/7/17	Tue 4/11/17	13
1.2.4	Auto Scheduled	Front End Deadline	0 days	Tue 4/25/17	Tue 4/25/17	10
1.3	**Auto Scheduled**	**Back End Development**	**21 days**	**Tue 3/28/17**	**Tue 4/25/17**	
1.3.1	Auto Scheduled	Code for forms	8 days	Tue 3/28/17	Thu 4/6/17	9
1.3.2	Auto Scheduled	Debugging	3 days	Wed 4/12/17	Fri 4/14/17	10
1.3.3	Auto Scheduled	Back End Deadline	0 days	Tue 4/25/17	Tue 4/25/17	14
1.4	**Auto Scheduled**	**Documentation**	**12 days**	**Mon 4/17/17**	**Tue 5/2/17**	
1.4.1	Auto Scheduled	Data Dictionary	2 days	Mon 4/17/17	Tue 4/18/17	14
1.4.2	Auto Scheduled	Code Documentation	4 days	Mon 4/17/17	Thu 4/20/17	14
1.4.3	Auto Scheduled	Documentation Deadline	0 days	Tue 5/2/17	Tue 5/2/17	
1.5	**Auto Scheduled**	**Project Deadline**	**0 days**	**Thu 5/4/17**	**Thu 5/4/17**	**19**

Planning

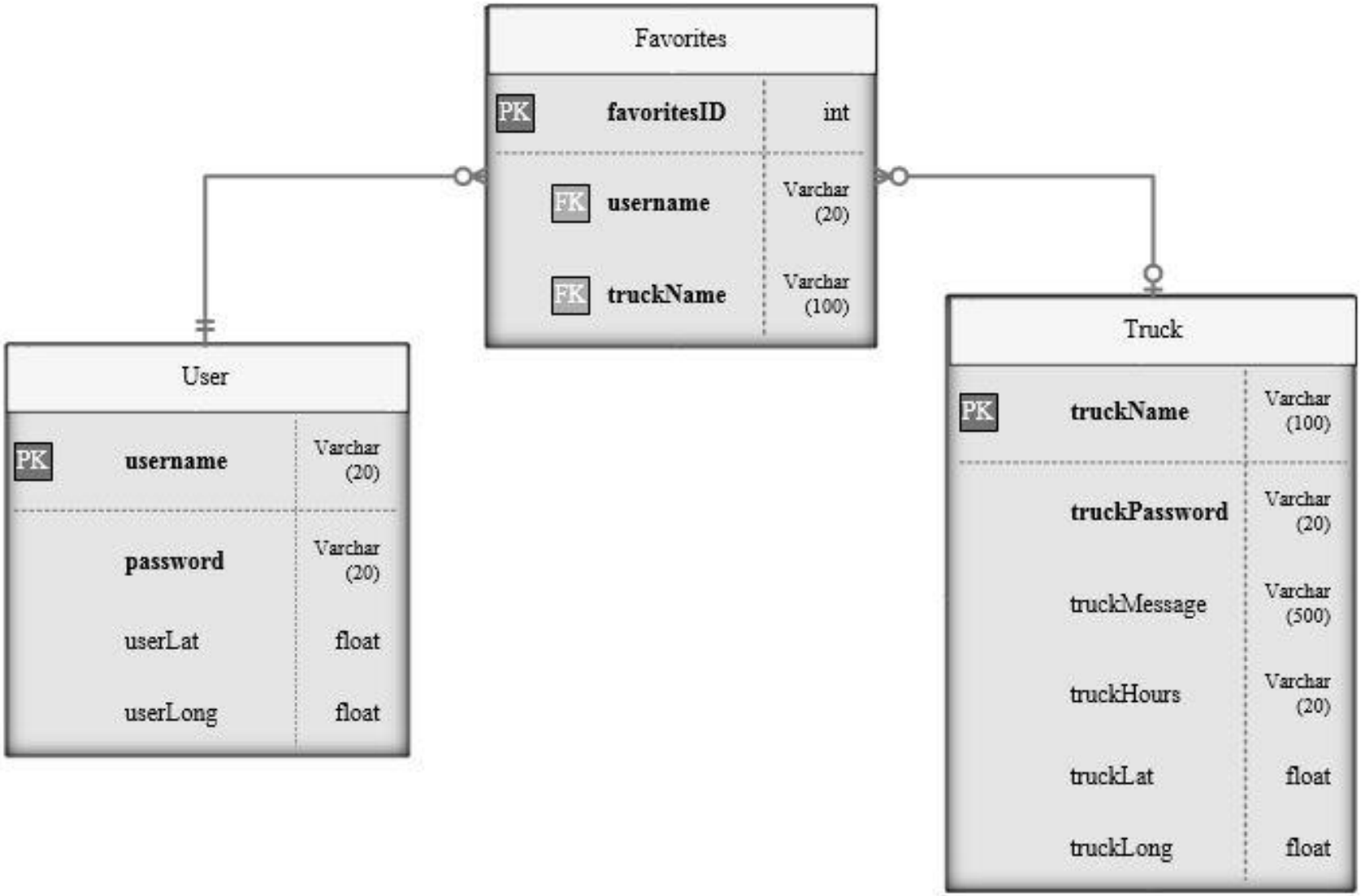
ID	WBS	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1	**1**		**Project**	**54 days**	**Mon 2/13/17**	**Thu 5/4/17**	
2	**1.1**		**Database Development**	**19 days**	**Mon 2/13/17**	**Thu 3/9/17**	
3	1.1.1		Table Design	5 days	Mon 2/13/17	Fri 2/17/17	
4	1.1.2		ERD	5 days	Mon 2/20/17	Fri 2/24/17	3
5	1.1.3		Coding Database	5 days	Mon 2/27/17	Fri 3/3/17	4
6	1.1.4		Database Deadline	0 days	Thu 3/9/17	Thu 3/9/17	5
7	**1.2**		**Front End Development**	**32 days**	**Mon 3/6/17**	**Tue 4/25/17**	
8	1.2.1		Plan page sequencing	5 days	Mon 3/6/17	Fri 3/10/17	5
9	1.2.2		Design forms	6 days	Mon 3/20/17	Mon 3/27/17	8
10	1.2.3		Connect Front end to Database	3 days	Fri 4/7/17	Tue 4/11/17	13
11	1.2.4		Front End Deadline	0 days	Tue 4/25/17	Tue 4/25/17	10
12	**1.3**		**Back End Development**	**21 days**	**Tue 3/28/17**	**Tue 4/25/17**	
13	1.3.1		Code for forms	8 days	Tue 3/28/17	Thu 4/6/17	9
14	1.3.2		Debugging	3 days	Wed 4/12/17	Fri 4/14/17	10
15	1.3.3		Back End Deadline	0 days	Tue 4/25/17	Tue 4/25/17	14
16	**1.4**		**Documentation**	**12 days**	**Mon 4/17/17**	**Tue 5/2/17**	
17	1.4.1		Data Dictionary	2 days	Mon 4/17/17	Tue 4/18/17	14
18	1.4.2		Code Documentation	4 days	Mon 4/17/17	Thu 4/20/17	14
19	1.4.3		Documentation Deadline	0 days	Tue 5/2/17	Tue 5/2/17	
20	**1.5**		**Project Deadline**	**0 days**	**Thu 5/4/17**	**Thu 5/4/17**	**19**




29, '17
Feb 5, '17
Feb 12, '17
Feb 19, '17
Feb 26, '17
Mar 5, '17
Mar 12, '17
Mar 19, '17
Mar 26, '17
Apr 2, '17
Apr 9, '17
Apr 16, '17
Apr 23, '17
Apr 30, '17
Table Design
ERD
Coding Database
3/9
Plan page sequencing
Design forms
Connect Front end to Database
4/25
Code for forms
Debugging
4/25
Data Dictionary
Code Documentation
5/2
5/4

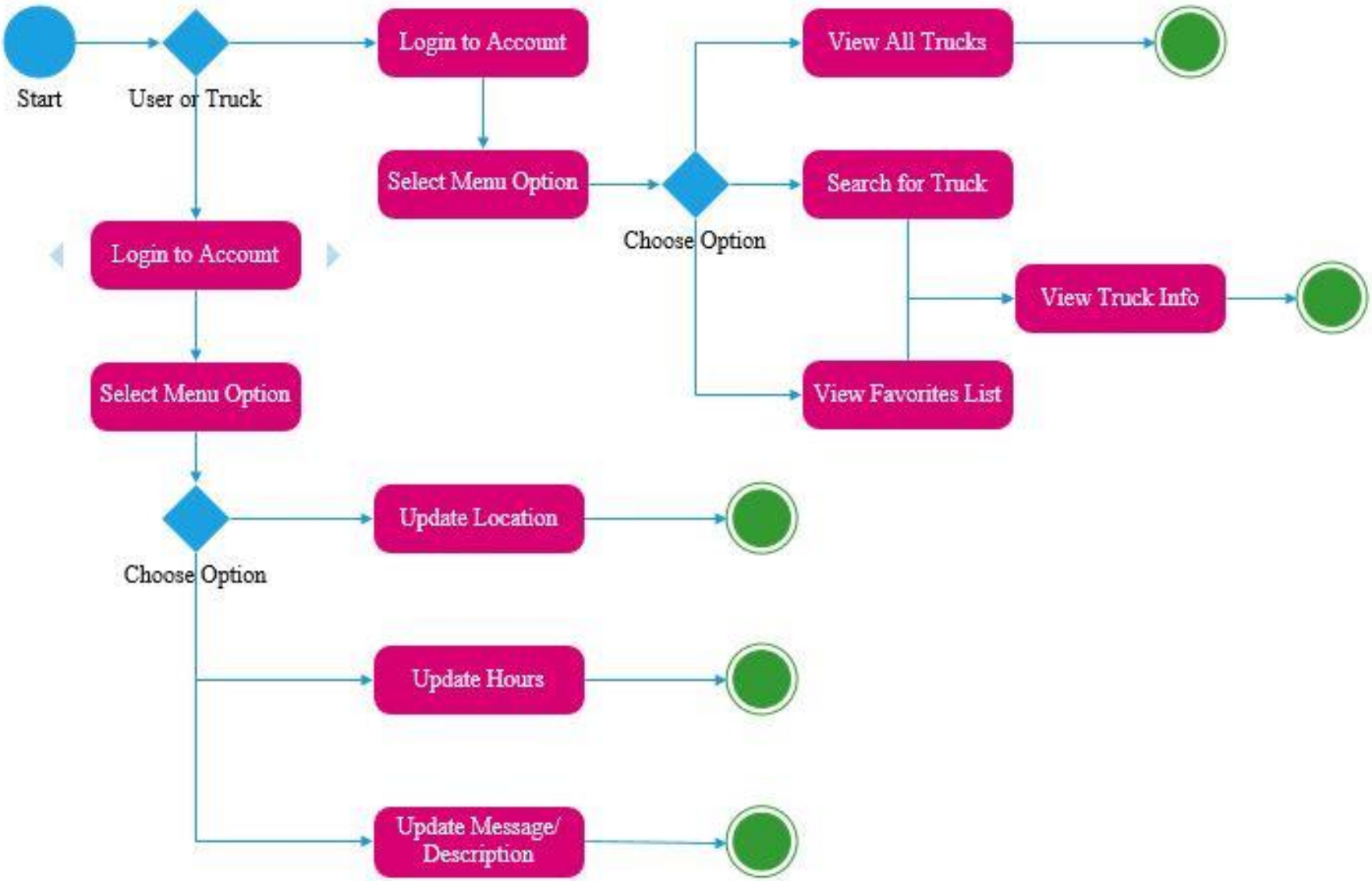

Project: Project Schedule
Date: Sun 5/14/17
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

Feast Yourself ERD

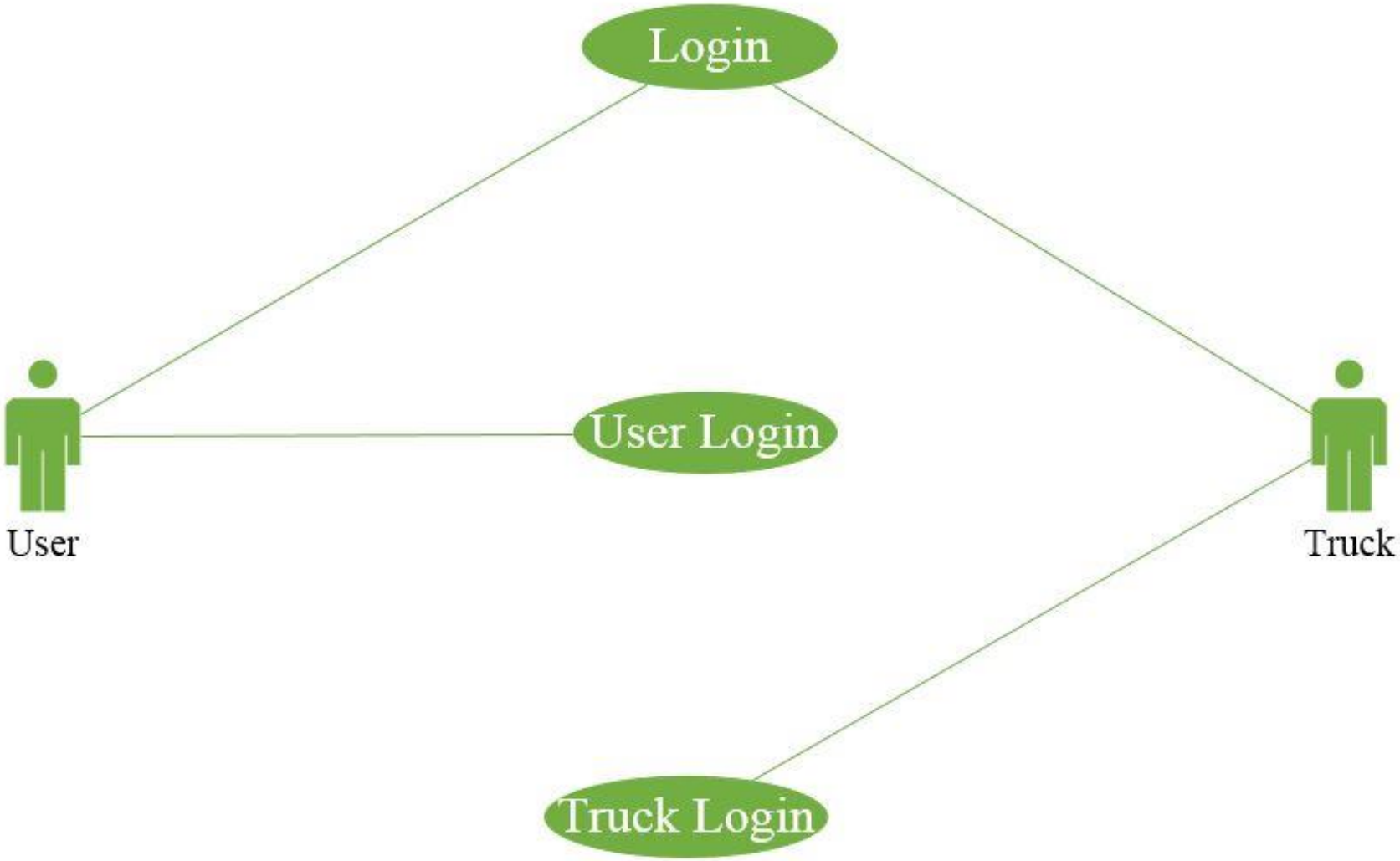


UML Charts and Diagrams

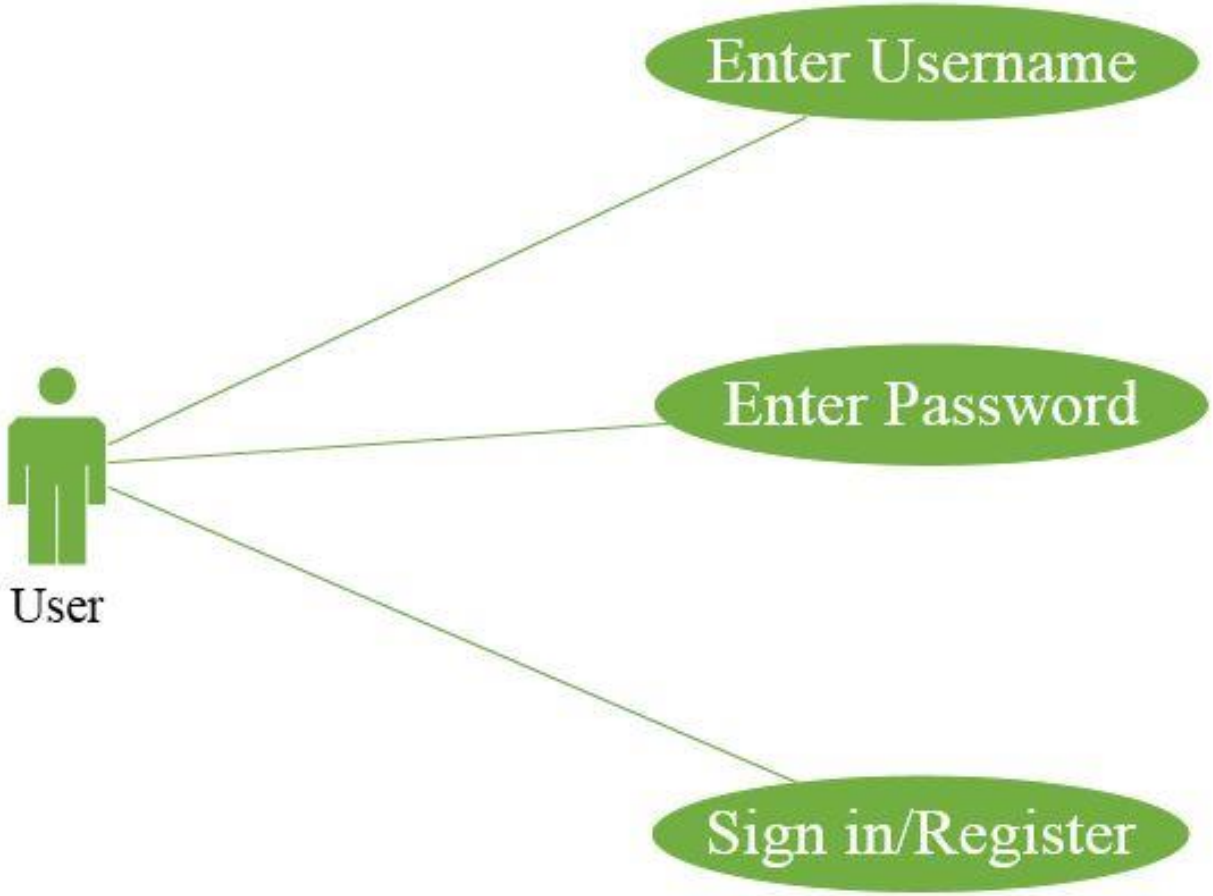
Feast Yourself Activity Diagram



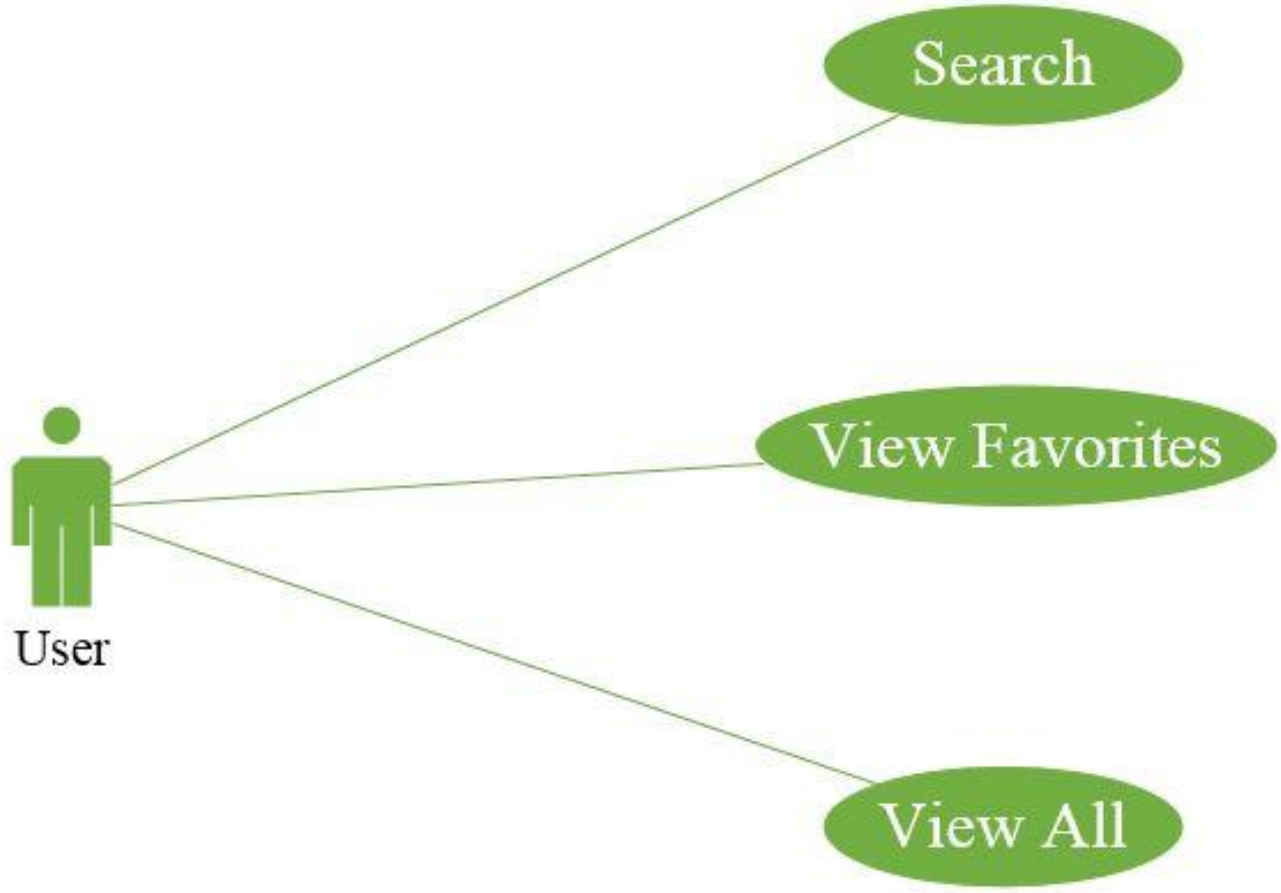
Feast Yourself Use Case – White Level



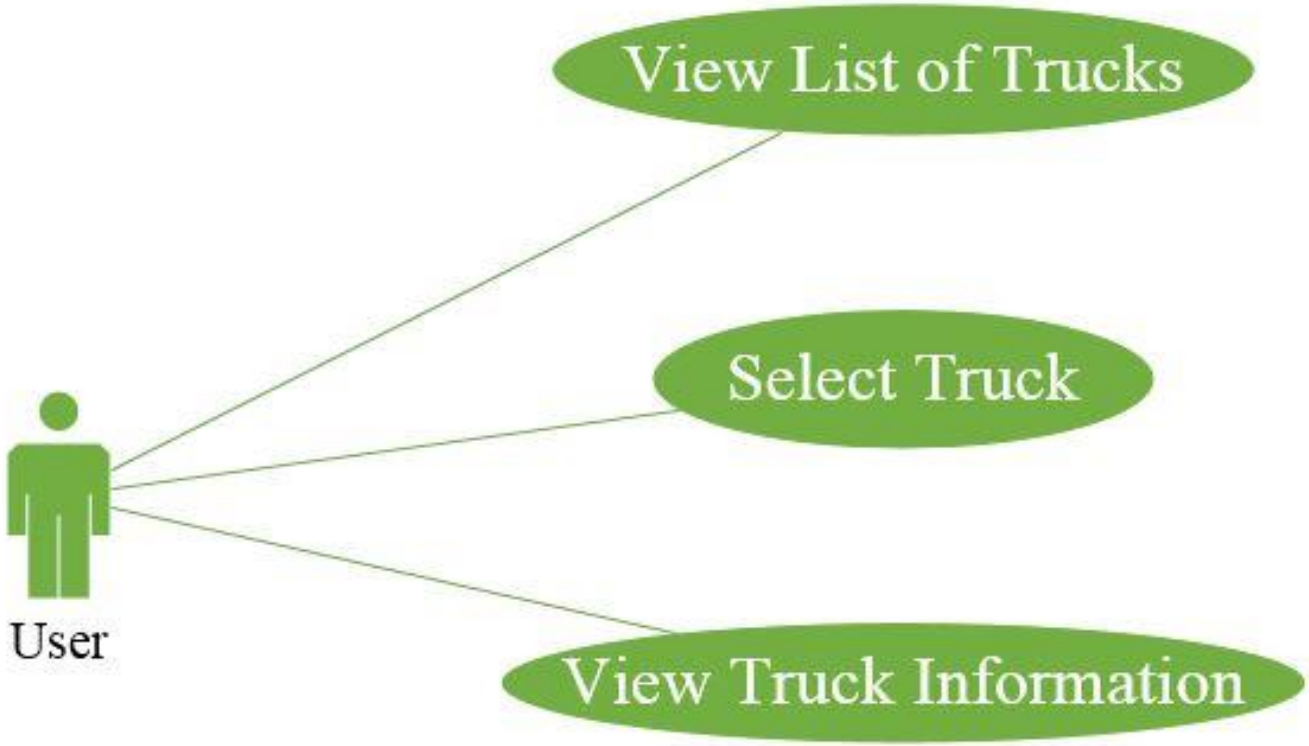
Feast Yourself Use Case – Kite Level: User Login



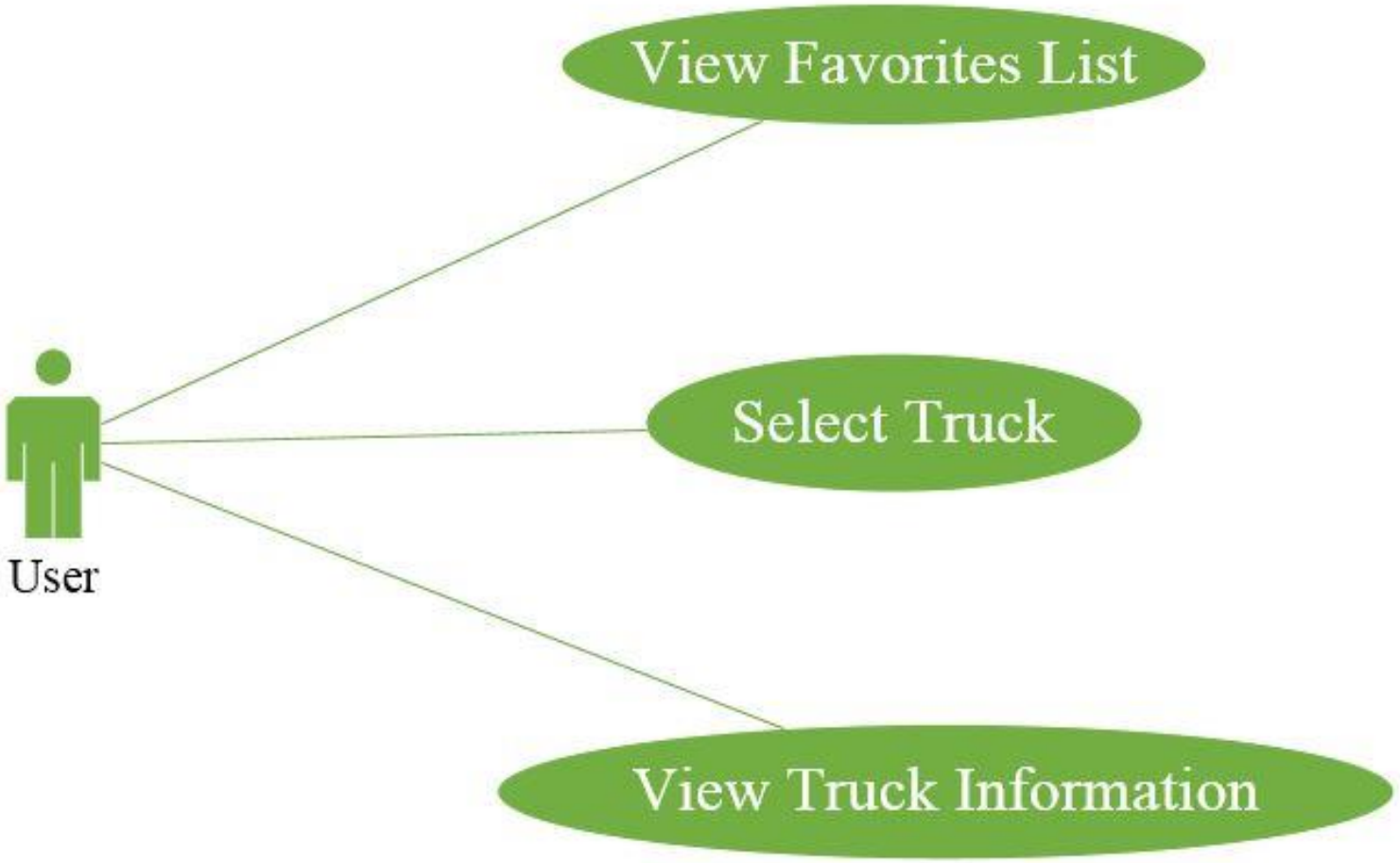
Feast Yourself Use Case – Blue Level: User Menu



Feast Yourself Use Case – Indigo Level: Search

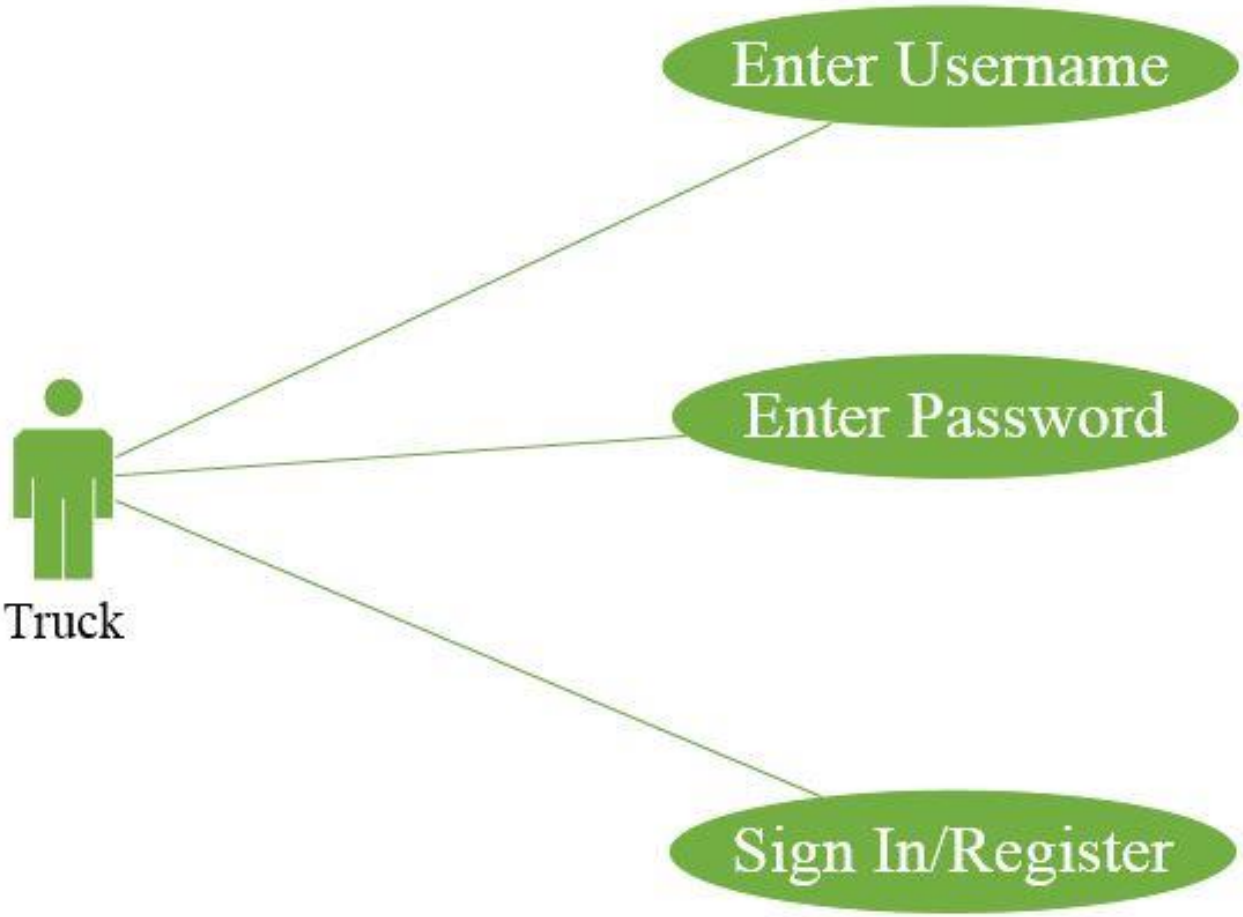


Feast Yourself Use Case – Indigo Level: View Favorites

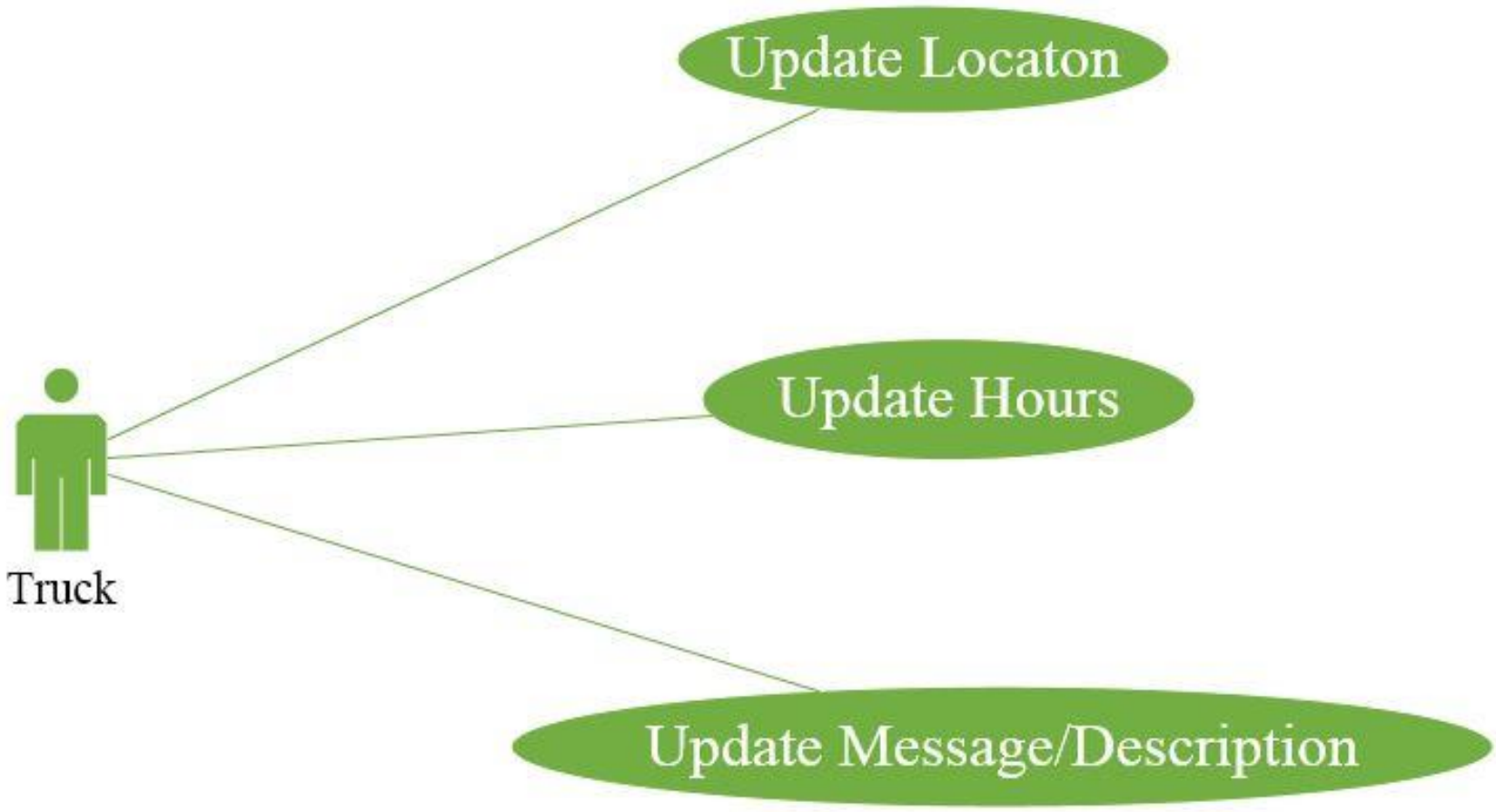


Feast Yourself Use Case – Indigo Level: View All

Feast Yourself Use Case – Kite Level: Truck Login

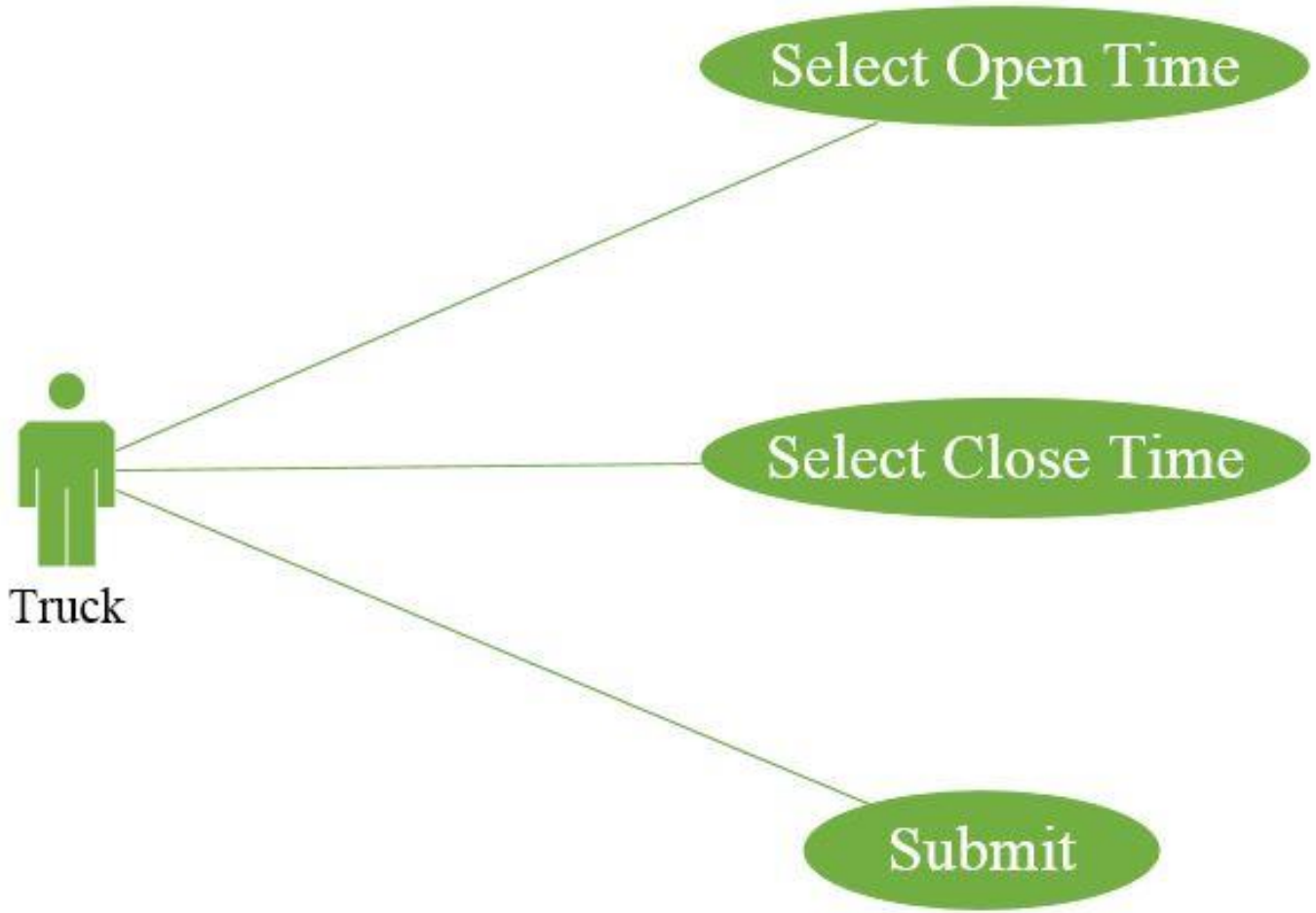


Feast Yourself Use Case – Blue Level: Truck Menu

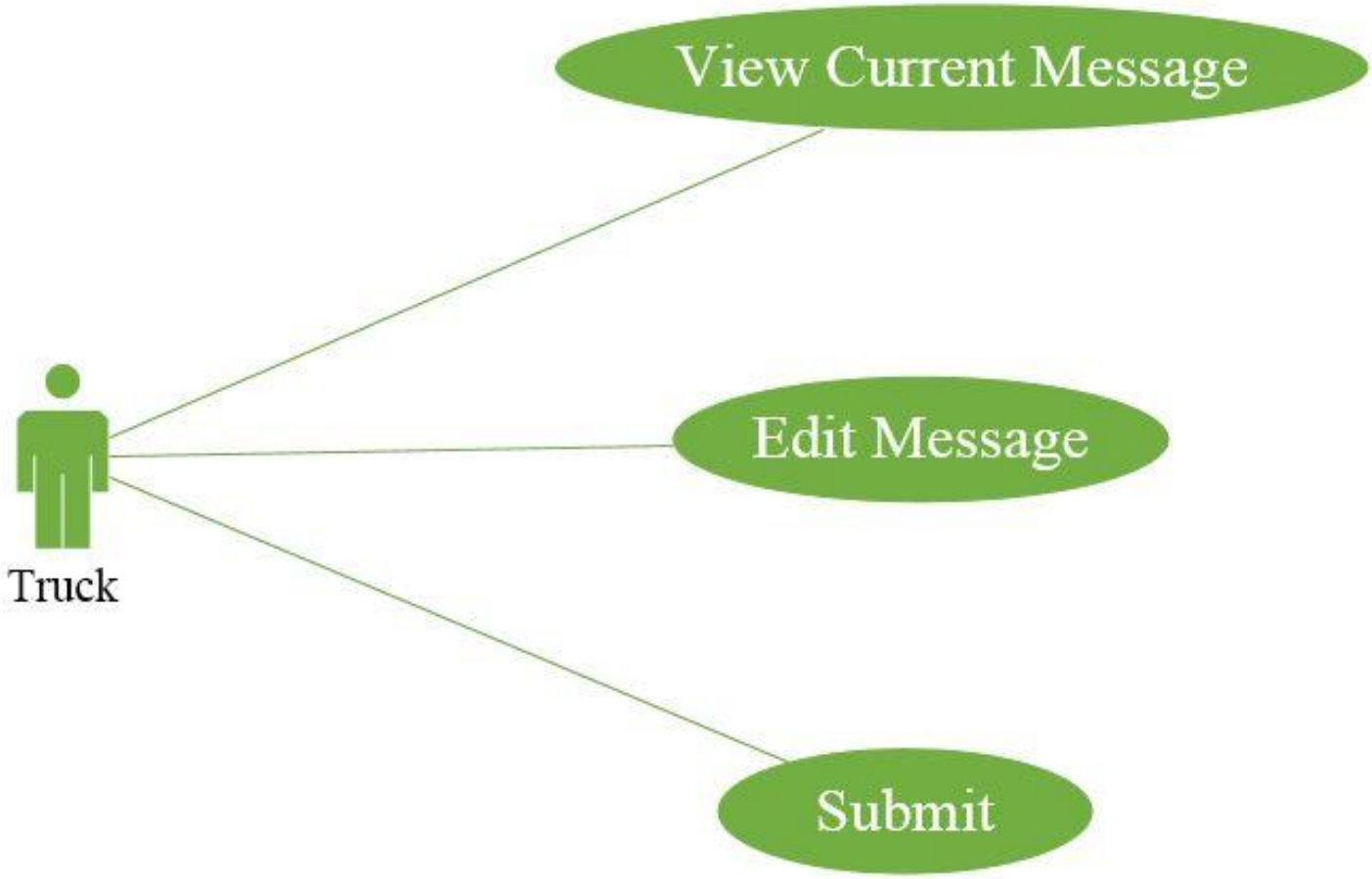


Feast Yourself Use Case – Indigo Level: Update Location

Feast Yourself Use Case – Indigo Level: Update Hours



Feast Yourself Use Case – Indigo Level: Update Message



Database Design

Feast Yourself Database Creation Queries
(Created using SQL Management Studio Designer)

User Table:

```
CREATE TABLE [dbo].[User](
	[username] [varchar](20) NOT NULL CONSTRAINT [DF_User_username]  DEFAULT (''),
	[password] [varchar](20) NOT NULL CONSTRAINT [DF_User_password]  DEFAULT (''),
	[userLat] [float] NULL,
	[userLong] [float] NULL,
 CONSTRAINT [PK_User] PRIMARY KEY CLUSTERED
```

Truck Table:

```
CREATE TABLE [dbo].[Truck](
	[truckName] [varchar](100) NOT NULL CONSTRAINT [DF_Truck_truckName]  DEFAULT (''),
	[truckPassword] [varchar](20) NOT NULL CONSTRAINT [DF_Truck_truckPassword]
DEFAULT (''),
	[truckMessage] [varchar](500) NULL CONSTRAINT [DF_Truck_truckMessage]  DEFAULT
(''),
	[truckHours] [varchar](50) NULL CONSTRAINT [DF_Truck_truckHours]  DEFAULT (''),
	[truckLat] [float] NULL,
	[truckLong] [float] NULL,
 CONSTRAINT [PK_Truck] PRIMARY KEY CLUSTERED
```

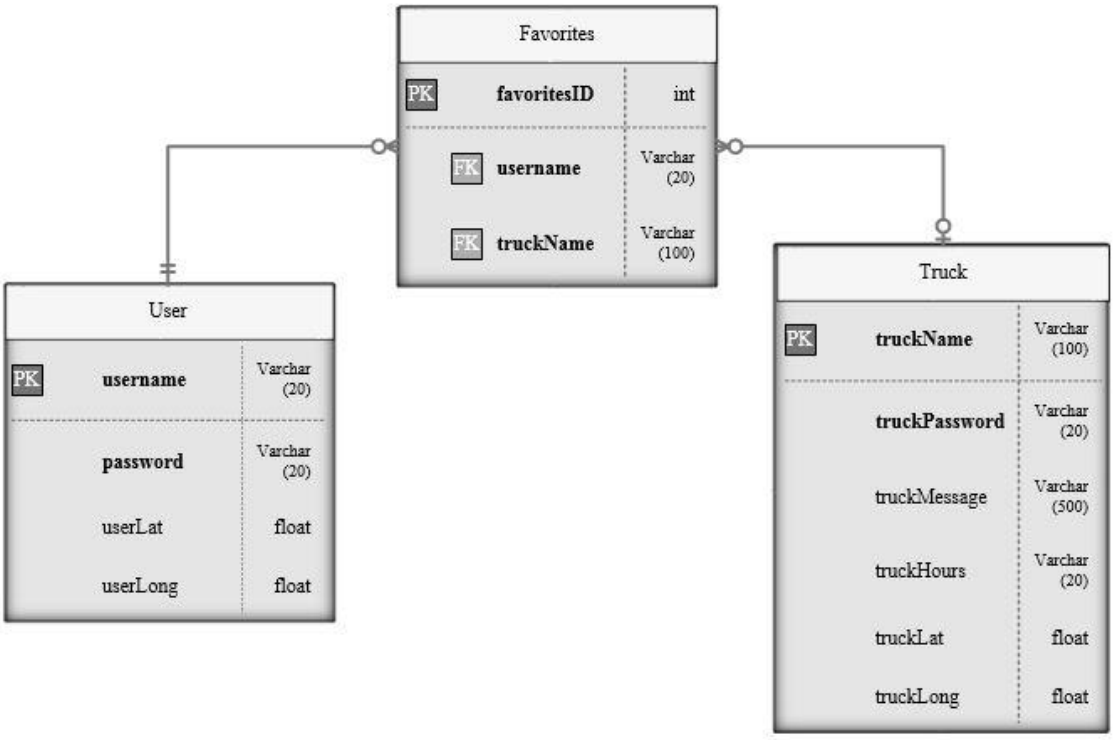
Favorites Table:

```
CREATE TABLE [dbo].[Favorites](
	[FavoritesID] [int] IDENTITY(1,1) NOT NULL,
	[username] [varchar](20) NOT NULL CONSTRAINT [DF_Favorites_username]  DEFAULT
(''),
	[truckName] [varchar](100) NOT NULL CONSTRAINT [DF_Favorites_truckName]  DEFAULT
(''),
 CONSTRAINT [PK_Favorites] PRIMARY KEY CLUSTERED

ALTER TABLE [dbo].[Favorites]  WITH CHECK ADD  CONSTRAINT [FK_Favorites_Truck] FOREIGN
KEY([truckName]) REFERENCES [dbo].[Truck] ([truckName])
GO

ALTER TABLE [dbo].[Favorites] CHECK CONSTRAINT [FK_Favorites_Truck]
GO

ALTER TABLE [dbo].[Favorites]  WITH CHECK ADD  CONSTRAINT [FK_Favorites_User] FOREIGN
KEY([username]) REFERENCES [dbo].[User] ([username])
GO

ALTER TABLE [dbo].[Favorites] CHECK CONSTRAINT [FK_Favorites_User]
GO
```

Feast Yourself Database Connection String

jdbc:sqlserver://feastyourself.database.windows.net:1433;
database=FeastYourself;
user=brni@feastyourself;
password={Spring2017};
encrypt=true;
trustServerCertificate=false;
hostNameInCertificate=*.database.windows.net;
loginTimeout=30;

Feast Yourself ERD

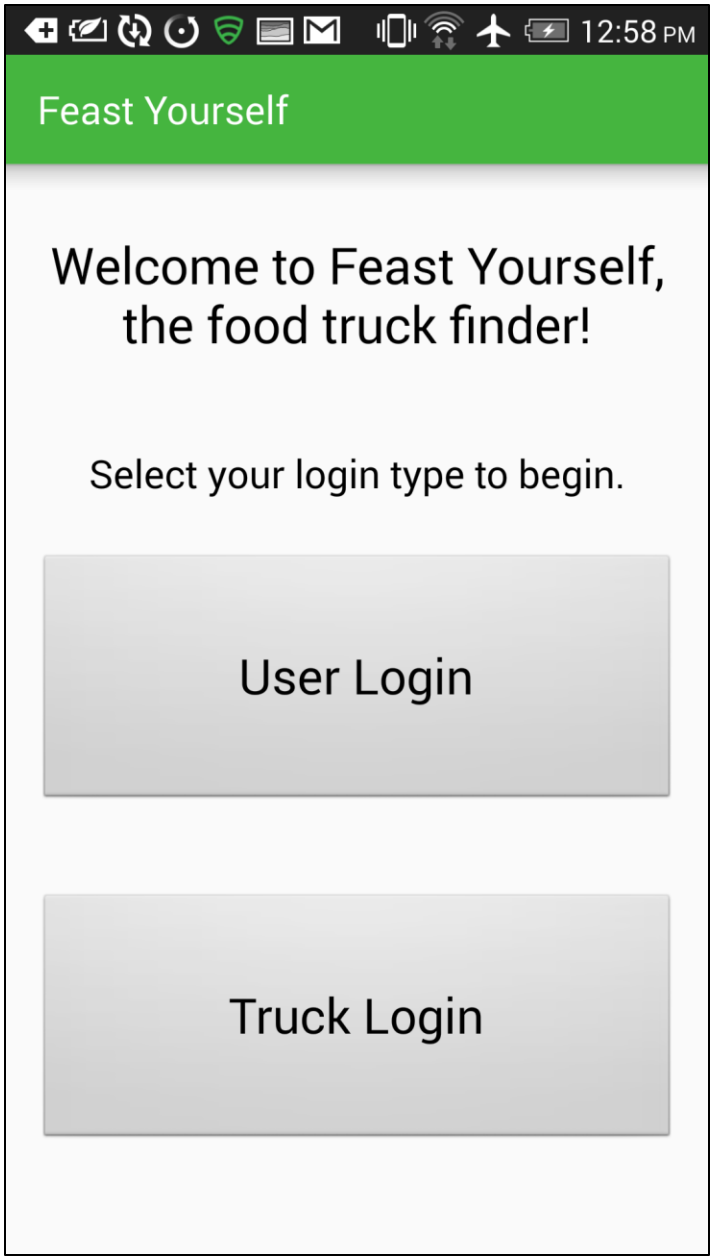


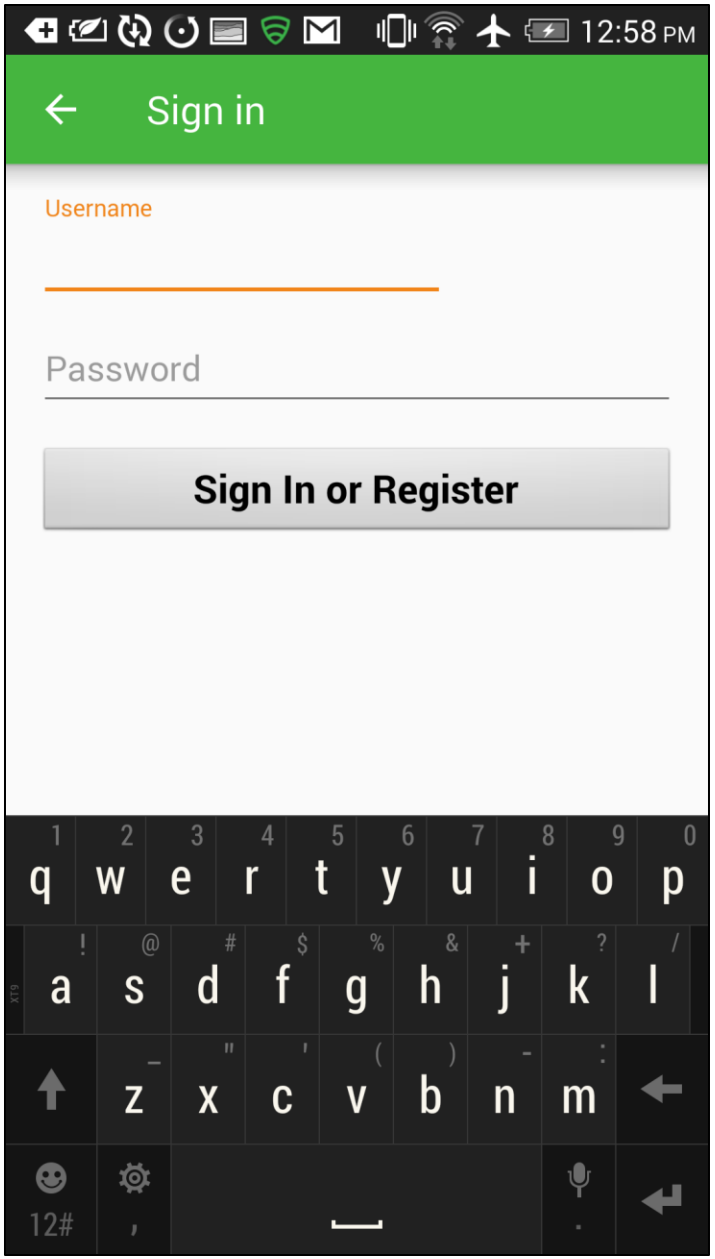
Feast Yourself Data Dictionary

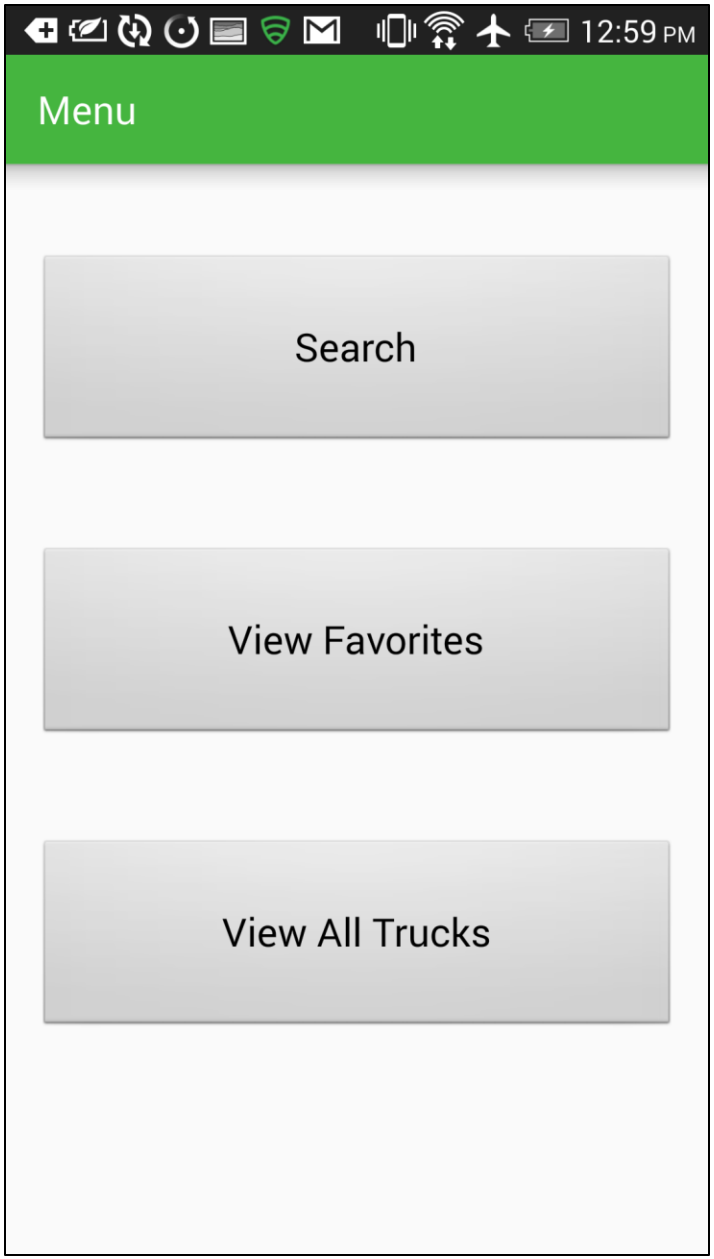
Entity Name	Entity Description	Attribute Name	Attribute Description	Data Type	Length	Primary Key	Foreign Key	Nullable
User	Contains user information for each user instance							
		username	Name of user's account	varchar	20	Yes	No	No
		password	User's password, used to access the account by validating the password and username combination	varchar	20	No	No	No
		userLat	Current latitude of user's location	float		No	No	Yes
		userLong	Current longitude of user's location	float		No	No	Yes
Truck	Contains truck information for each truck instance							
		truckName	Name of the food truck	varchar	100	Yes	No	No
		truckPassword	Truck's password, used to access the account by validating the password and truck name combination	varchar	20	No	No	No

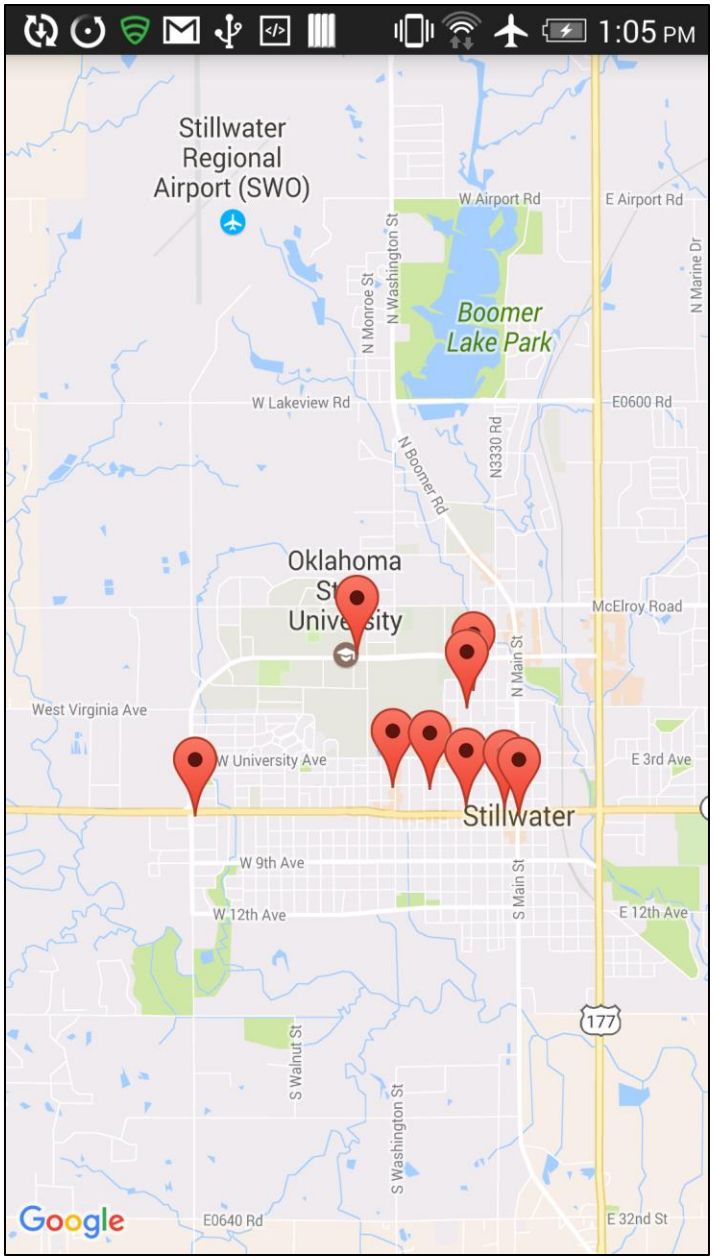
		truckMessage	Message written by the truck account owner. Can include any information, such as contact information or notices about specials the food truck is having.	varchar	500	No	No	Yes
		truckHours	Operating hours of the food truck	varchar	50	No	No	Yes
		truckLat	Current latitude of food truck's location	float		No	No	Yes
		truckLong	Current longitude of food truck's location	float		No	No	Yes
Favorites	Contains a pairing of a username and a truck name created when a user designates a food truck as a "favorite" to allow easy access to the truck's information							
		favoritesID	Auto-incremented identifier	int		Yes	No	No
		username	Name of user's account	varchar	20	No	Yes	No
		truckName	Name of the food truck	varchar	100	No	Yes	No

Screenshots

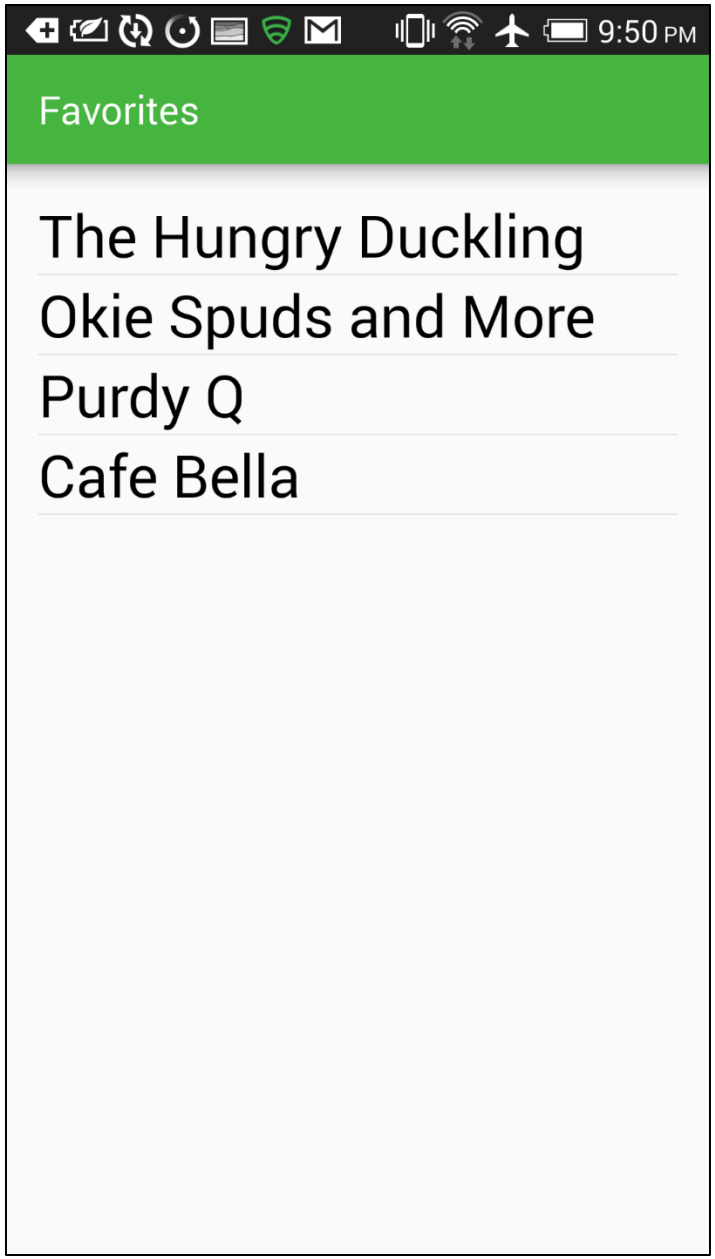

12:58 PM
Feast Yourself
Welcome to Feast Yourself, the food truck finder!
Select your login type to begin.
User Login
Truck Login

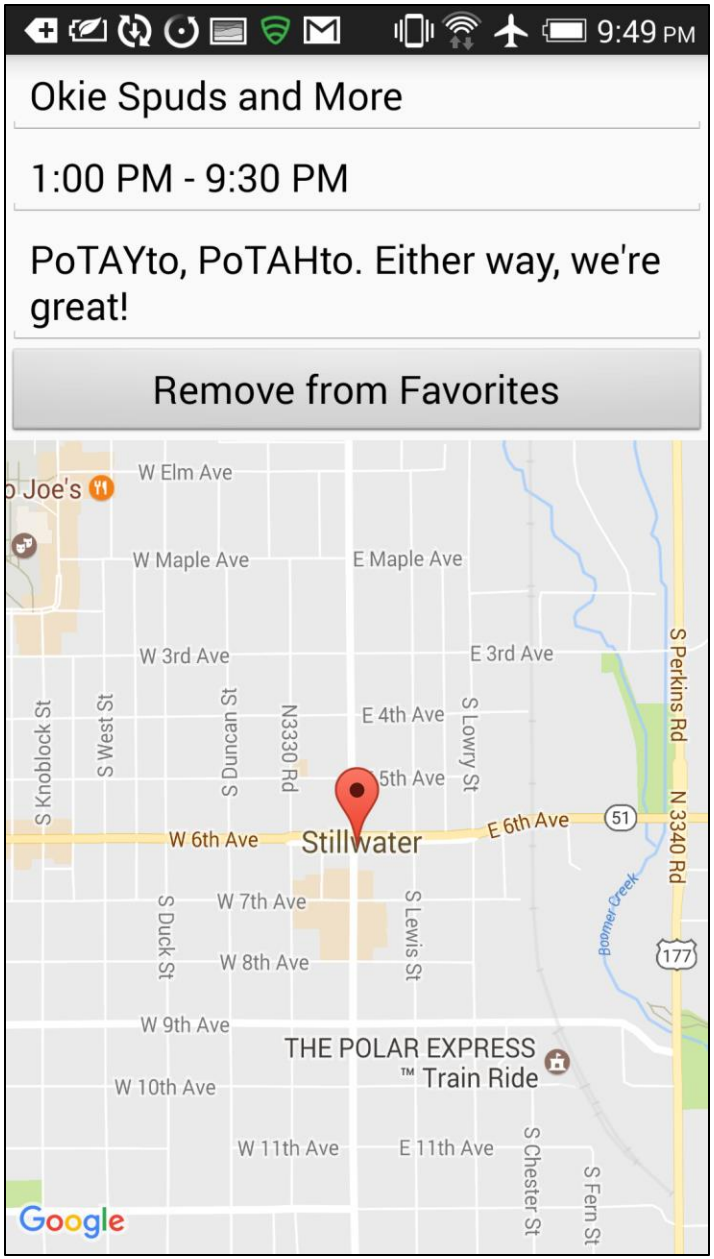

12:58 PM
Sign in
Username
Password
Sign In or Register

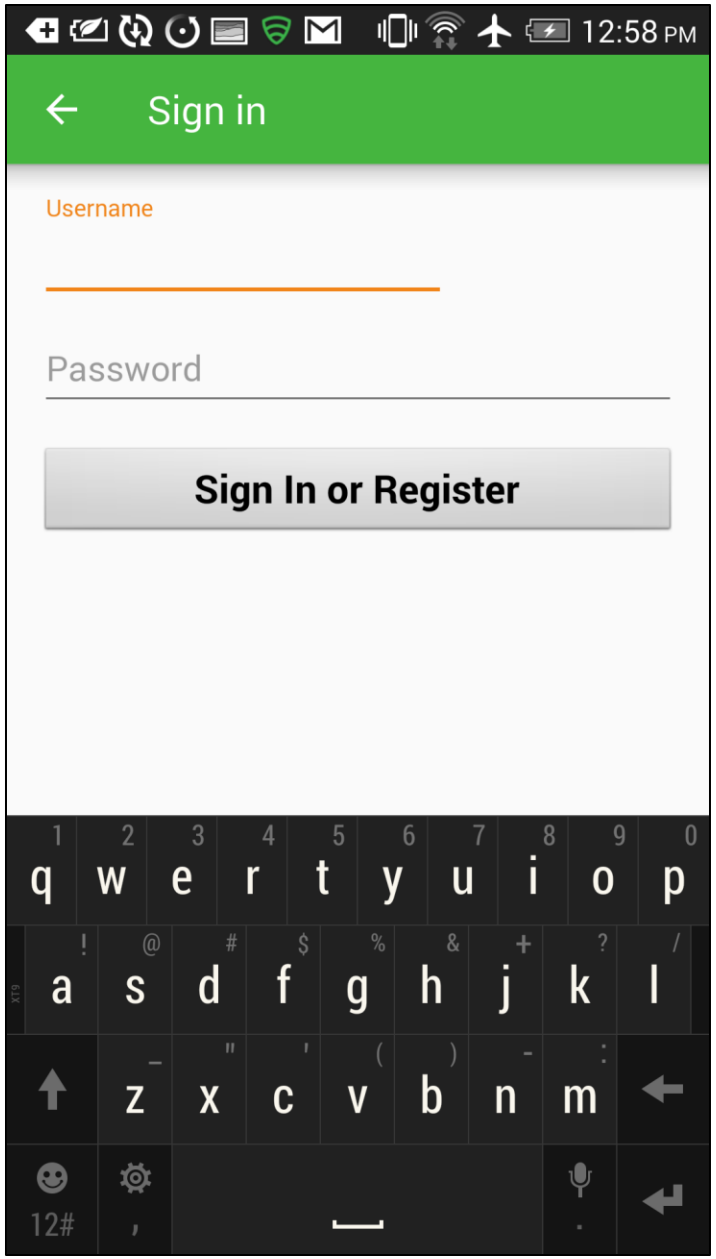

12:59 PM
Menu
Search
View Favorites
View All Trucks

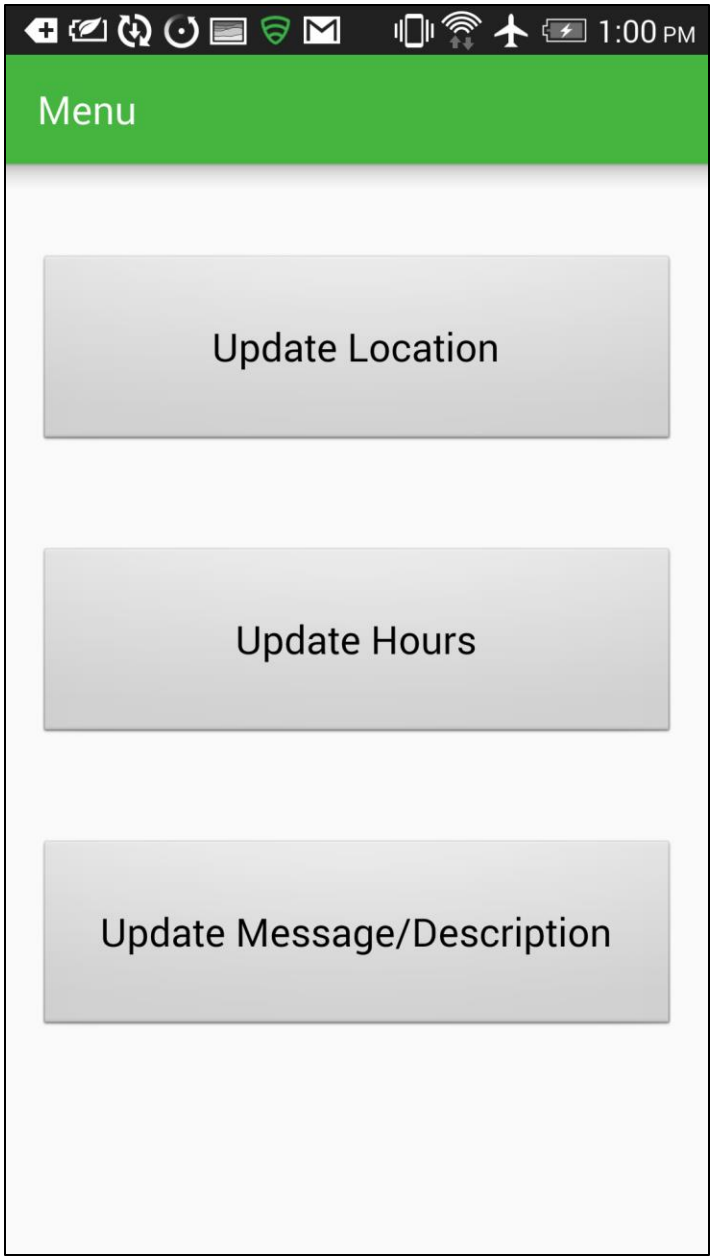

1:05 PM
Stillwater Regional Airport (SWO)
W Airport Rd
E Airport Rd
N Monroe St
N Washington St
N Marine Dr
Boomer Lake Park
W Lakeview Rd
E0600 Rd
N3330 Rd
N Boomer Rd
Oklahoma St University
McElroy Road
N Main St
West Virginia Ave
W University Ave
E 3rd Ave
Stillwater
W 9th Ave
W 12th Ave
S Main St
E 12th Ave
177
S Walnut St
S Washington St
Google
E0640 Rd
E 32nd St

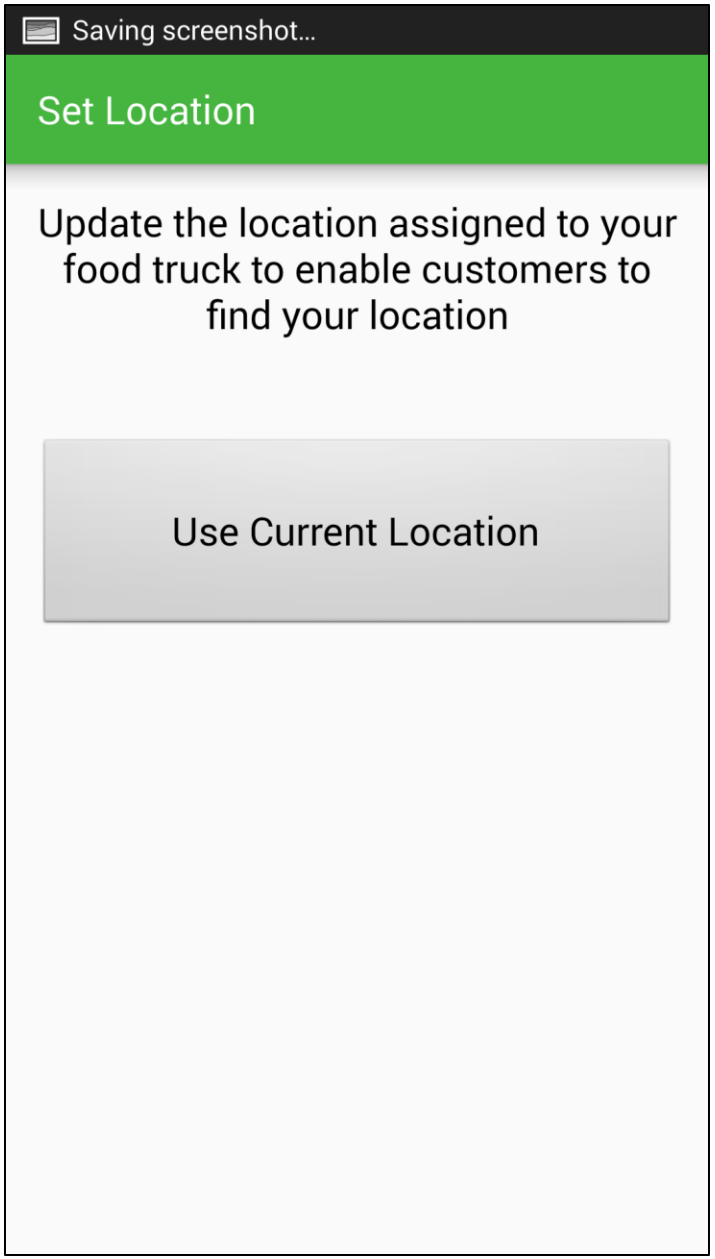

9:49 PM
Search
Cafe Bella
Chophouse Taqueria
Kim's Vietnamese Cuisine
Nilima's Authentic Food of India
Okie Spuds and More
Purdy Q
Thai Loco
The Curty Shack
The Hungry Duckling
truck 1

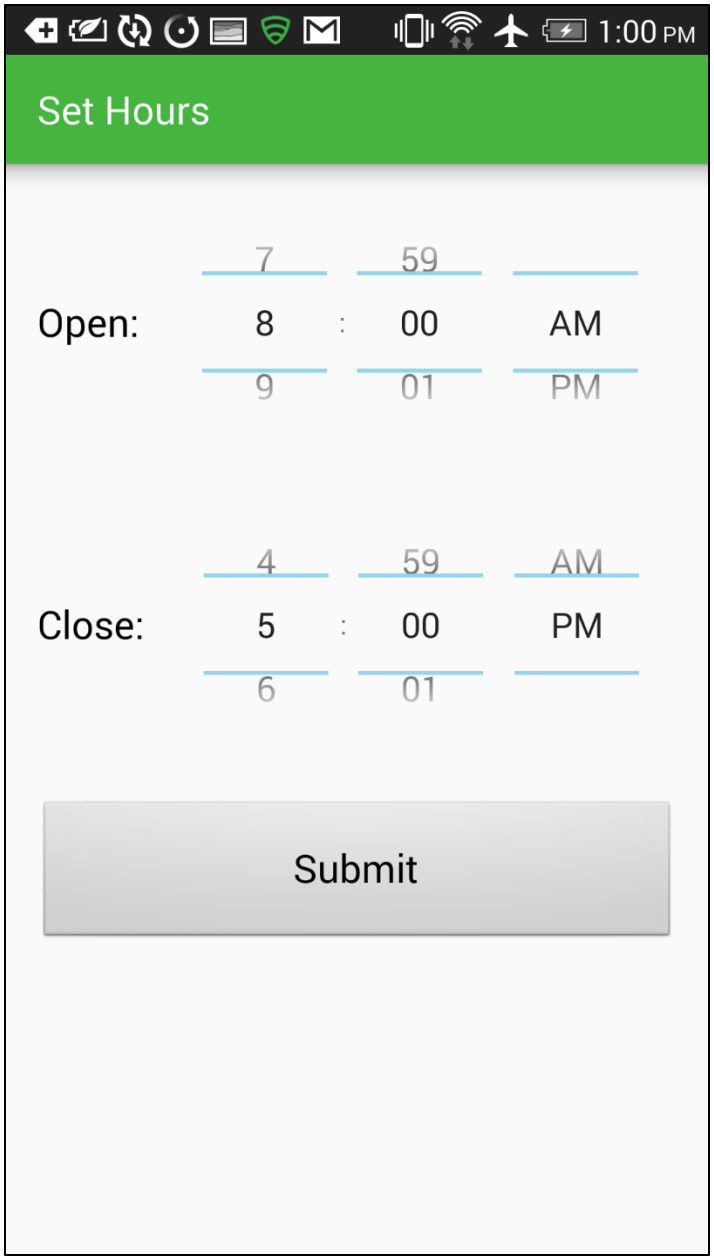

9:50 PM
Favorites
The Hungry Duckling
Okie Spuds and More
Purdy Q
Cafe Bella

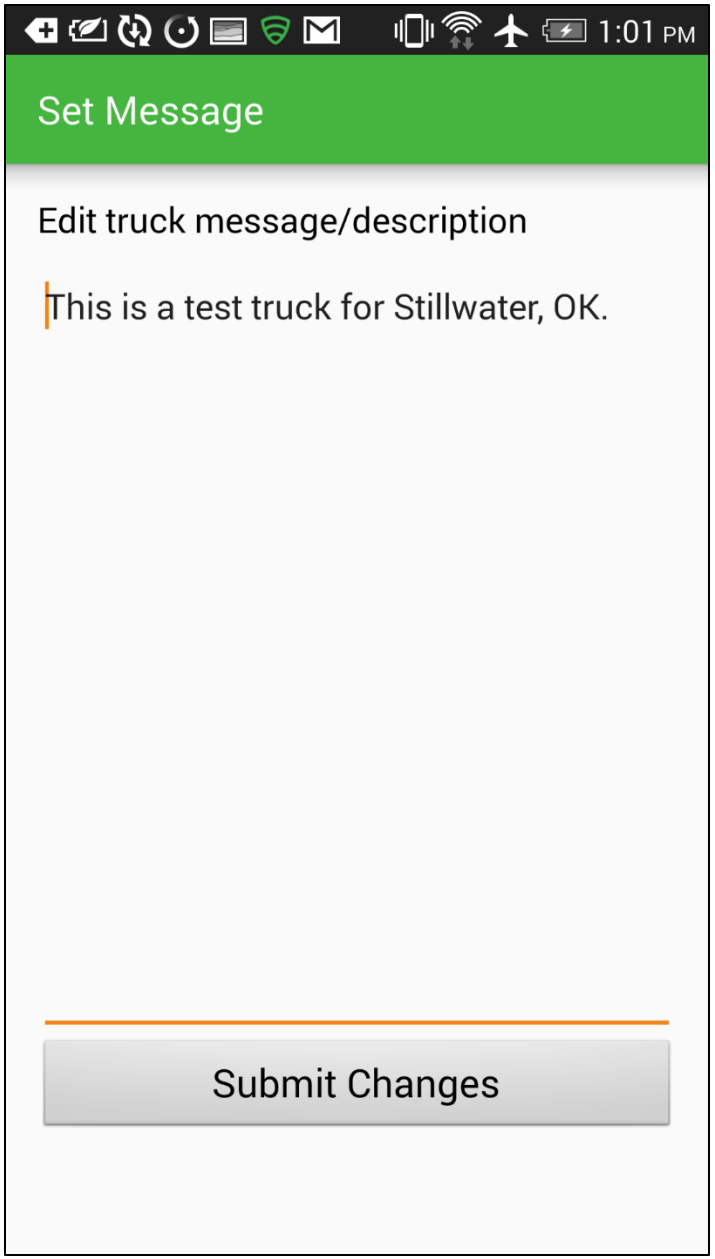

9:49 PM
Okie Spuds and More
1:00 PM - 9:30 PM
PoTAYto, PoTAHto. Either way, we're great!
Remove from Favorites
W Elm Ave
Joe's
W Maple Ave
E Maple Ave
W 3rd Ave
E 3rd Ave
S Perkins Rd
S Knoblock St
S West St
S Duncan St
N3330 Rd
E 4th Ave
S Lowry St
5th Ave
W 6th Ave
Stillwater
E 6th Ave
51
N 3340 Rd
W 7th Ave
S Duck St
S Lewis St
Boomer Creek
W 8th Ave
177
W 9th Ave
THE POLAR EXPRESS™ Train Ride
W 10th Ave
W 11th Ave
E 11th Ave
S Chester St
S Fern St
Google


12:58 PM
Sign in
Username
Password
Sign In or Register
1 2 3 4 5 6 7 8 9 0
q w e r t y u i o p
! @ # $ % & + ? /
a s d f g h j k l
z x c v b n m
12#


1:00 PM
Menu
Update Location
Update Hours
Update Message/Description


Saving screenshot...
Set Location
Update the location assigned to your food truck to enable customers to find your location
Use Current Location


1:00 PM
Set Hours
Open:
7
8
9
59
00
01
AM
PM
Close:
4
5
6
59
00
01
AM
PM
Submit


1:01 PM
Set Message
Edit truck message/description
This is a test truck for Stillwater, OK.
Submit Changes

Presentation

Feast Yourself: The Food Truck Finder

Amanda Brown
Oklahoma State University
MSIS Department
Thesis Director: Dr. Taha Havakhor
Second Reader: Dr. Corey Baham

Business Case: Problem Definition

- Goal: To produce a functioning mobile Android application which will provide a means to track and locate food trucks in the Stillwater, OK area
- No such applications are currently available
- Without this application, users have no easy way to find hours and locations for local food trucks

Business Case: Problem Definition

- User can use various methods such as Google and social media
- Often contain outdated information or information that is difficult to find
- This application provides users with a mobile application containing information directly obtained from food truck vendors, updated by the vendors themselves as often as needed
- The application helps truck owners attract more customers

Business Case: Specific Problems

- A web application for the purpose of tracking food truck locations and hours already exists
  - Project from a previous class group
- The web application is not as useful to users as a mobile application
  - Requires the use of a web browser and is therefore not optimized for mobile devices

Business Case: Specific Problems

- Most users will be searching for locations and hours using mobile devices
- Important that the web application be replaced with a streamlined mobile application
- Mobile application should provide a redesigned interface with comparable functionality in a more user-friendly fashion

Business Case: Scope and Functionality

User Functionality

- User login
- Create new user
- Allow selection of favorite trucks
- Display selected favorites
- Show messages from favorites
- Allow searches for new trucks
- Find all truck locations on map

Truck Functionality

- Truck vendor login
- Create new truck vendor
- Set truck description
- Set truck hours
- Update truck location
- Update information in database

Business Case: Methodology

- Agile Methodology
- Meet with Thesis Director at least once a week to review progress
- Meet periodically with Second Reader to review progress
- Develop UML Charts
  - Use Case Diagrams
  - Activity Diagram
- Android development environment

Business Case: Feasibility

- Financial Feasibility
  - Uses free resources to host the database
  - Uses the free Android Studio development environment
- Time Feasibility
  - Should be able to be developed within the time allotted for the class this semester
  - Will include 20-30 hours of work outside of actual class time

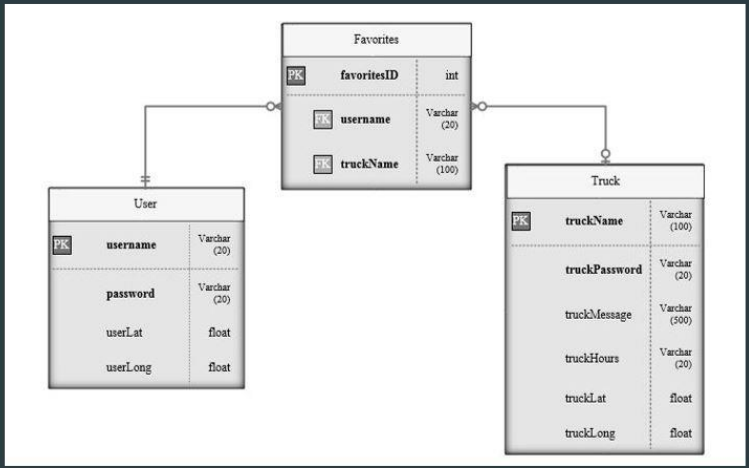
Business Case: Feasibility

- Technical Feasibility
  - Need a scalable database server for business usage
  - Student access to free online cloud services, such as Microsoft Azure, is sufficient for prototyping purposes

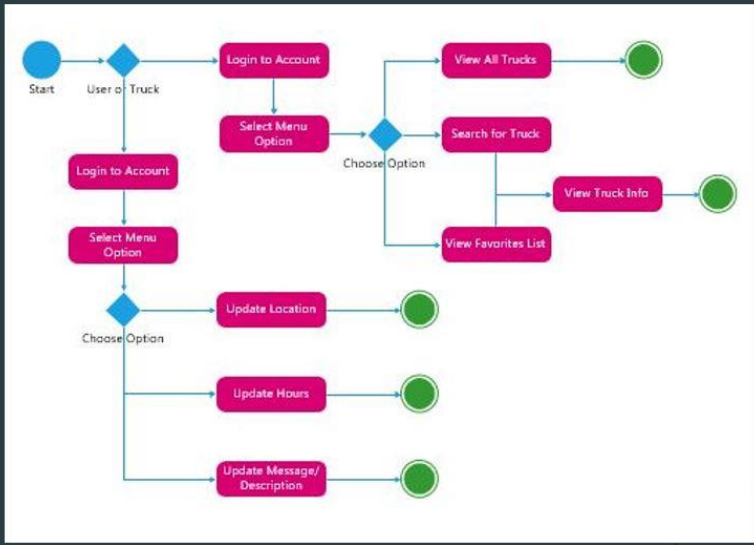
Business Case: Schedule

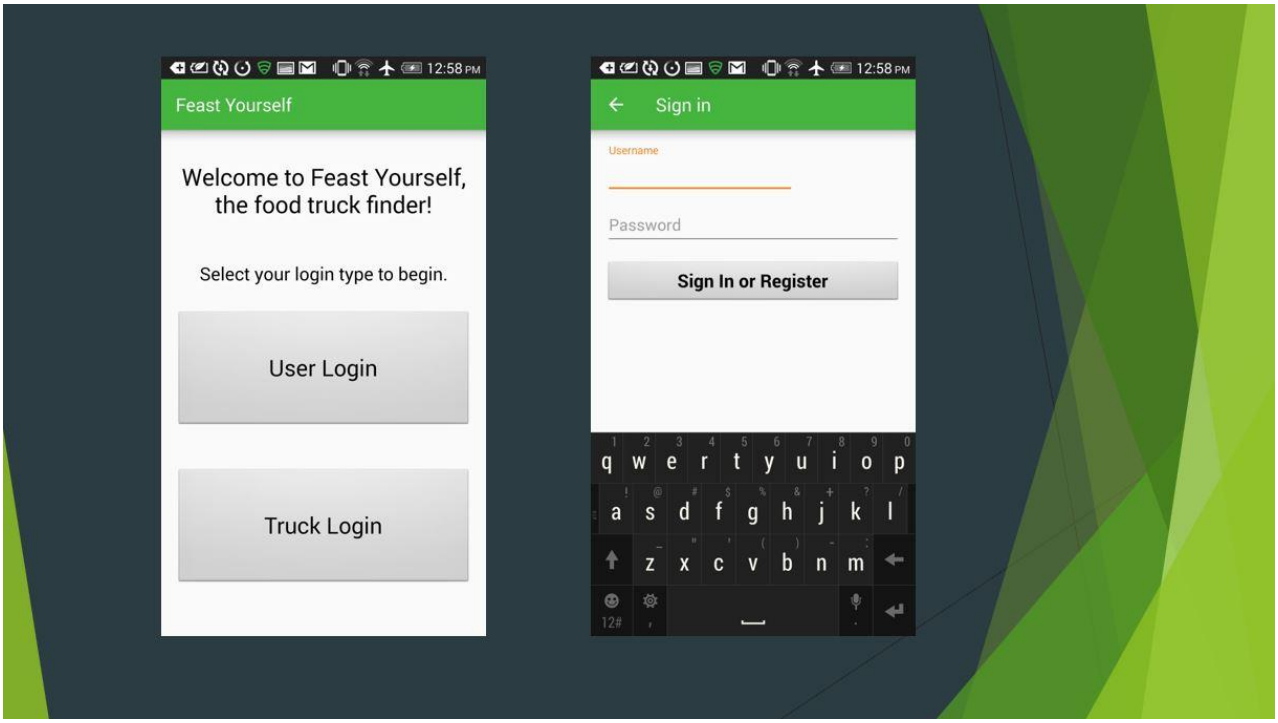
WBS	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Project**	**54 days**	**Mon 2/13/17**	**Thu 5/4/17**	
1.1		**Database Development**	**19 days**	**Mon 2/13/17**	**Thu 3/9/17**	
1.1.1		Table Design	5 days	Mon 2/13/17	Fri 2/17/17	
1.1.2		ERD	5 days	Mon 2/20/17	Fri 2/24/17	3
1.1.3		Coding Database	5 days	Mon 2/27/17	Fri 3/3/17	4
1.1.4		Database Deadline	0 days	Thu 3/9/17	Thu 3/9/17	5
1.2		**Front End Development**	**32 days**	**Mon 3/6/17**	**Tue 4/25/17**	
1.2.1		Plan page sequencing	5 days	Mon 3/6/17	Fri 3/10/17	5
1.2.2		Design forms	6 days	Mon 3/20/17	Mon 3/27/17	8
1.2.3		Connect Front end to Database	3 days	Fri 4/7/17	Tue 4/11/17	13
1.2.4		Front End Deadline	0 days	Tue 4/25/17	Tue 4/25/17	10
1.3		**Back End Development**	**21 days**	**Tue 3/28/17**	**Tue 4/25/17**	
1.3.1		Code for forms	8 days	Tue 3/28/17	Thu 4/6/17	9
1.3.2		Debugging	3 days	Wed 4/12/17	Fri 4/14/17	10
1.3.3		Back End Deadline	0 days	Tue 4/25/17	Tue 4/25/17	14
1.4		**Documentation**	**12 days**	**Mon 4/17/17**	**Tue 5/2/17**	
1.4.1		Data Dictionary	2 days	Mon 4/17/17	Tue 4/18/17	14
1.4.2		Code Documentation	4 days	Mon 4/17/17	Thu 4/20/17	14
1.4.3		Documentation Deadline	0 days	Tue 5/2/17	Tue 5/2/17	
1.5		**Project Deadline**	**0 days**	**Thu 5/4/17**	**Thu 5/4/17**	**19**

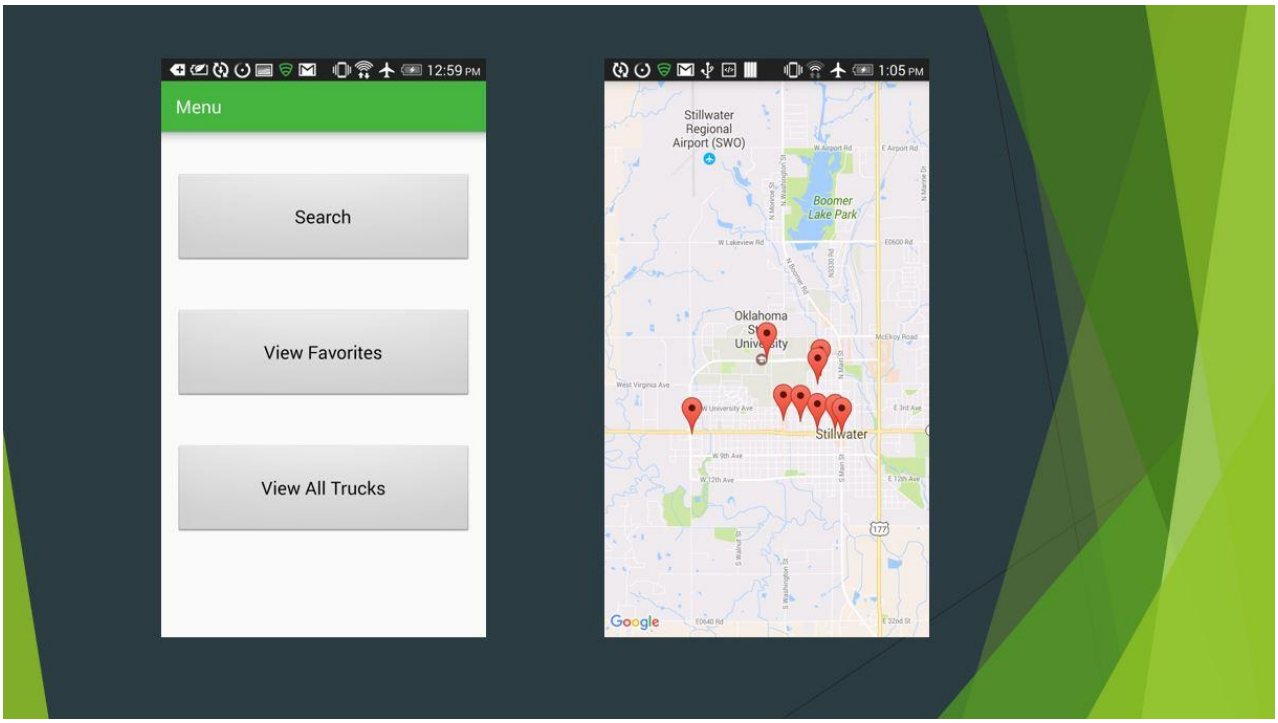
Database Design

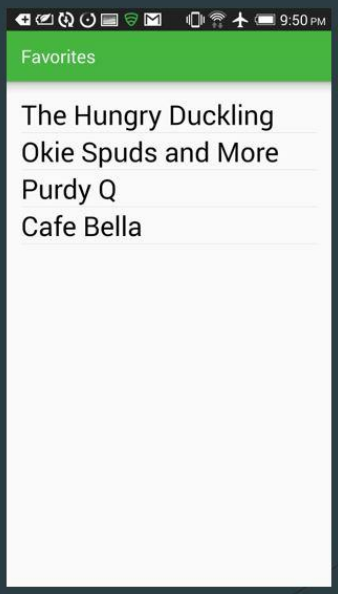


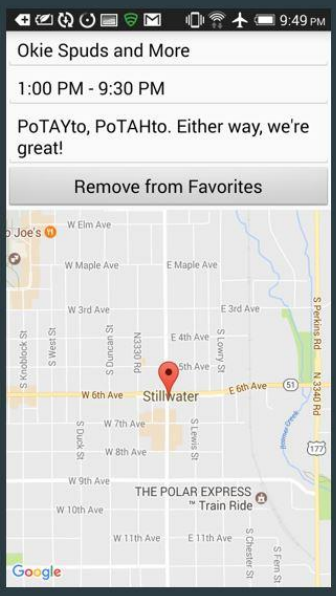
Activity Diagram




12:58 PM
Feast Yourself
Welcome to Feast Yourself, the food truck finder!
Select your login type to begin.
User Login
Truck Login
12:58 PM
Sign in
Username
Password
Sign In or Register

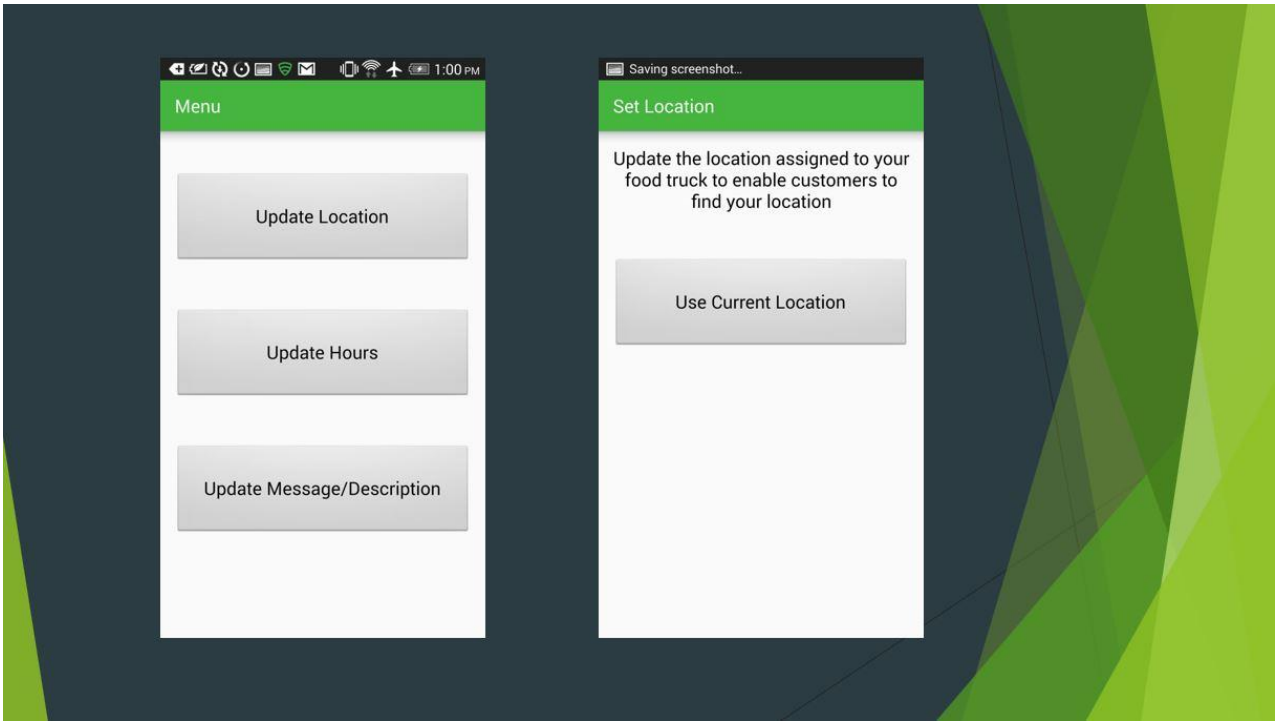

12:59 PM
Menu
Search
View Favorites
View All Trucks
1:05 PM
Stillwater Regional Airport (SWO)
Boomer Lake Park
Stillwater
Google

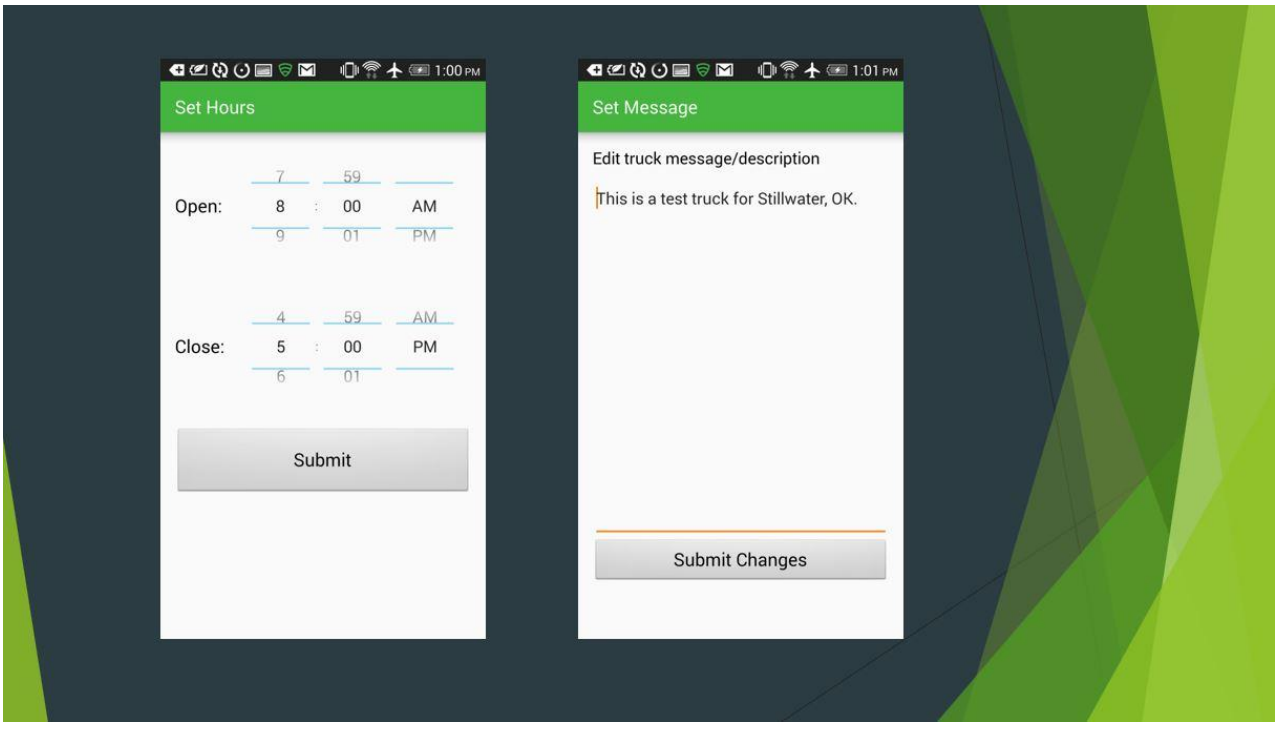




Truck Information Page

- Provides all truck information
- Displays information for the truck selected from either the Search page or the Favorites page
- Opens map in Google Maps to provide directions


1:00 PM
Menu
Update Location
Update Hours
Update Message/Description
Saving screenshot...
Set Location
Update the location assigned to your food truck to enable customers to find your location
Use Current Location


1:00 PM
Set Hours
Open:
7
8
9
59
00
01
AM
PM
Close:
4
5
6
59
00
01
AM
PM
Submit
1:01 PM
Set Message
Edit truck message/description
This is a test truck for Stillwater, OK.
Submit Changes


Demonstration


Questions?